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Shadows and Straws

BEFORE the next issue of THE JOURNAL reaches the majority of its readers, the Annual Convention will be in session at Washington. This year should bring forth a large attendance. Work is not generally pressing, interest in professional problems is keen, and this Convention, by reason of the very large increase in the membership of the Institute, will invite the largest number of delegates ever elected by the Chapters. In addition, there should be a generous representation of the State Societies, to which invitations have been extended, following the precedent inaugurated last year.

The architectural exhibition will be a feature this year, as it was last, and will have the additional interest of awards for the best work in plan and design, the exhibition for this purpose being divided into six sections—domestic, ecclesiastical, public, commercial, industrial, and institutional. A gold medal will be awarded in each class, provision therefor having been made by a generous gift from a member of the Institute. Likewise the exhibition should be improved because of the more extensive hanging facilities offered by the Smithsonian Institution, for the Convention will be held in their newest building generally known as the National Museum. Here also will be a large hall capable of seating 500 people, with a smaller one holding 100. It is hoped to arrange meetings on a more interesting plan than formerly, and perhaps to make provision for suitably entertaining those whose interests run either to the esthetic or the practical.

As usual there will be pre-convention meetings of numerous kinds—education, registration, competitions, community planning; and a two days session of the Board of Directors. Also, it is the hope of the Chairman of the Committee on Small Houses, we believe, that there may be a meeting of all those interested in learning of the work of the Small House Bureau of Minnesota, reported on so favorably by President Kendall and Mr. Kohn, on their return from a visit to the Pacific Coast. Those delegates who can arrange to arrive in Washington a day ahead of the Convention will no doubt find an extraordinary opportunity for preparing themselves to vote intelligently during the next three days.

ONE OF THE pressing questions will be that of Registration. Last year the Convention referred the matter of joint registration with Engineers, for further study, to the Committee on Registration. Since that time the National Council of Registration Boards, composed of men who are in charge of the administration of registration laws in the several states having such laws, met at St. Louis, as already recorded in these pages, and unanimously opposed the principle of joint registration. During the same period, one joint law has been passed in Minnesota, and was referred to over the signature of Mr. Waid, in our last issue. Briefly it may be said that joint registration is opposed principally because of the inherent danger of giving either profession any chance of acquiring power over the other, and because, as the engineers outnumber the architects about ten to one, it is believed that a joint law should not be enacted. Safeguards, however carefully devised to defeat untoward meddling on the part of either profession, might do very well at the beginning, but when future amendments were concerned, as is certain to be the case, the influence exerted by engineers would far outweigh any that could be brought to bear by architects. "No entangling alliances" is the maxim of those who oppose, and their argument has of course been well supported by the Council of Registration Boards.

On the other hand the proponents of Joint Registration declare their faith in the principle because it tends to bring the two professions together harmoniously, to obviate quarrelsome and disturbing activities on the part of either profession in attempting to secure legislation designed to benefit the one and injure the other, (of which there has already been example), and also because of the general tendency in all State administrations to reduce the number of Boards and administrative agencies. Likewise it is pointed out that the whole principle of registration is more likely to receive favorable consideration by any Legislature when its support springs from a harmonious concert of architects and engineers.

A third form of registration has now made its appearance in the Parallel Laws presented to the Legislature of Nebraska, and this principle has many sup-

porters. A comparison of the parallel laws, indicates their very clearly stated purpose, and presents two very interesting definitions of the two professions, in which, perhaps for the first time, they are distinguished from each other in language offering a sound basis for a judicial determination of the two fields. At least, the definitions are an example of that recognized necessity for definition which is so likely to spring up under laws not carefully drawn. As we go to press, we learn that the Nebraska law has failed of passage in the present legislature, which is not unusual. Rarely has any registration bill been enacted on the first try. The sponsors of this one are confident.

COMPETITIONS will be present, as usual. The proposed amendments suggested by the Boston Chapter last year and somewhat revised since then, have been discussed by several Chapters but generally with disapproval so far as we are able to learn. The Oregon Chapter, according to our information, strongly supports the present Code, except that it would apparently welcome the amendment proposed by the Boston Chapter. But this would seem to present a flat contradiction, since the amendments do, in fact, quite alter the spirit of the Code. But the Boston Chapter, we believe, has faith that it will be able to meet the situation, by a change which will not affect the Code. Certainly it has made an heroic effort to meet what it believes to be a genuinely troublesome condition.

FELLOWSHIPS will not, apparently come before the Convention, since the special committee appointed to study this question, has not completed its labors. It now proposes a questionnaire to all members, as a means of securing a consensus of opinion, and it is our hope that in taking such a referendum it will call attention to the exhaustive study of "Fellows and Fellowships" which appeared in THE JOURNAL for February, 1919.

The question is far from being a sentimental one. It is involved in a principle of organization which ought to be most carefully weighed and considered as to its effect upon the advancement of architecture, and not as to the benefits to be conferred upon architects.

THE RECENT APPROVAL, in principle, of the charters presented for the new Chapters in Kansas and Montana, appears to indicate that these two latest additions to the list may be in active existence at the time of the Convention. Also, it is not unlikely that the Secretary may have the pleasure of announcing two or three more possible new Chapters that loom on the not far distant horizon. These events, taken in connection with the phenomenal growth of the Institute during the last twelve months, seem to lend support to the theory that the Institute should take an attitude of the utmost friendliness to State Societies, offering them, as it does now, the privileges of the floor at Convention, and all help and encouragement in the meantime. At the same time, there is steadily growing a faith, emphasized by the Chapter and Membership growth to which we have alluded, that the mission of the Institute is not to foster State Societies as permanent necessities, but rather to lend such effort to the growth of Chapters, and above all, to such an elevation of standards required for admission to practise architecture, that the number of men who cannot, for any reason, join the Institute, shall steadily decrease. This applies not only to the question of ridding the profession of the incompetent, but also to the establishment of a level of competency where all architects may not only be members of the Institute, but where their professional livelihood shall be assured. Only by a high quality of service steadily improved by the imposition of higher and higher standards, can the public be won to a true valuation of the architect. Ceaselessly combating every tendency toward monopoly, the Institute must bend its steps in the direction we have indicated. It must, as a matter of principle, refuse to assume that we shall always have a large class of architects who cannot join the Institute, and, on the contrary, must work for the establishment of standards which will eliminate, to the irreducible minimum, all practitioners who cannot, for no matter what reason, become members of the basic organization upon which these duties now devolve.

THE AMERICAN INSTITUTE of Architects was asked to lend its encouragement and support to the formation of the American City Planning Institute. It did so, much against the feeling of a great many who feared that the architectural character of the city planning movement might be side-tracked with unfortunate results. They held no particular brief for architects, for they recognized how seriously the profession has ignored the problems which have been accumulating thick and fast. Yet they declined to believe that architecture can safely be laid to one side in any discussion of city planning.

As compensation for their regret, came the hope that the American City Planning Institute would certainly go deeply into the economic aspects of city planning. Here was a great work that needed the doing, and which had been ignored almost completely. The vast avenues of research opened up by the land problem, by taxation, and by commercial and industrial sabot[illegible] intimately related to our urban ills that [illegible] be ignored by any Institute of scientific researc[illegible] for what is an Institute if not for that?

The Committee on Community Planning of [illegible] American Institute of Architects has made a great [illegible] tribution along these lines, and its effort ha[illegible] heartily welcomed by the intelligent city planners both in this country and abroad. And of course it requires something more than intelligence in carrying on a scientific work of this kind. Courage is also needed,

in a high degree, for one must not become concerned with what the clients are going to say when the inexorable distillations of science are held up before them. One must hold no briefs. One must not be concerned with the sale of any particular nostrum. One must seek to find out why it is that our communities are steadily piling up their debt, steadily finding it necessary to raise valuations, and steadily increasing the rate of assessment thereon, while we fall further behind in schools, play spaces, air, light, sanitation, with a declining quality in almost all that we do. Yet there are those who still cry their wares—"zoning," for example—with an amazing bravado. How can one dare to offer a cure for our mounting ills until science has turned the light on full and clear? Wilfully to refuse to lift the mantle of darkness seems something akin to a pathetic betrayal of the coming generations, of our children and our children's children. Will an Institute arise to lift the mantle of blackness that now hangs over the Reasons Why and the Causes Of?

MUCH SERIOUS WRESTLING with the problem presented by the building industry is now being done. A good deal of it is specious, but there are those who are earnestly trying to find a way out of what at present looks somewhat like an impasse. The resolutions drawn up by twenty members of the Illinois Chapter are published in this issue, but one finds it difficult to see wherein the last clause of all does not nullify all that went before. The "Philadelphia Plan" presented by the Council of Associated Building Trades of that city is an exceedingly able presentation of the problem. It contains an earnest plea for co-operation to reduce waste, eliminate lost motion, and arrange for a fair wage and a fair profit. It seems a pity that the report did not go farther and deal with fundamentals, for until we are willing to understand them, we shall not get far.

Very commonly our ears are assailed, for example, with the phrase "over production." What does it mean? To many it is one of the most carefully designed deceptions ever practised upon a stupid people. They believe that the real phrase which we ought to get to know is "under consumption." Then we might begin to perceive that as a nation we cannot begin to consume what we produce. Why not? Because people cannot buy the things. What! we cannot buy back what we produce! No, we cannot, and yet there are millions of our people who need the things that cannot be sold. Why can they not buy them? And thus we arrive in the neighborhood of what is the matter, and of what will continue to be the matter, more and more, and ever increasingly more, until we are willing to get down to the truth. Mr. Ackerman deals with that phase of our system called "sabotage" or "restriction of output," in this issue. It is part of the faulty system of distributing the results of production. It is universally practiced, because forsooth, there is not much else to do under our system of measuring production in terms of a money price and of trying to convert the results of production into money under the competitive system of selling. We may keep on repairing, and tinkering, and plugging, but it would be better, very much better, to try to understand what is the matter. Or shall we still go on with the betrayal of those to come? C. H. W.

The Architect

A Quest of the Definition

By WILLIAM L. STEELE

SEEKING THE DEFINITION of the word "architect" is one of the quests that look easy until you begin to work on it. My little four year old boy has been asking me lately the "Why" as to the names of things. He is filled with wonder because water is called "water" and queries how it happened to be so named and why it wasn't named something else. We grown-ups sometimes wonder why we called "architects" and it is evidence of confusion of such practitioners that a definition of the term is necessary for the sake of clear thought, wise recommendation, and sound action. In attempting to define the term "architect" the question presents itself "Do we wish to define the architect as he is or as he ought to be? Do we want to define him in terms of history, ancient and modern, and to deduce therefrom what he is likely to be in the future?" Again, one may construct a theory after the fact, or deduce the theory from commonly accepted basic principles leaving facts to adjust themselves to it as best they may.

I know very well what I *think* an architect really is, but I sometimes wonder if I am all wrong. My dilemma arises from the fact that so many of us profess the same principles and so few of us agree in practice. We preach fairly well but only a Philadelphia lawyer could square our work with our preaching. It may be that our trouble is due to our lack of careful definition of terms. We use the same words and perhaps give them different meanings. The idea that the jumble of inconsistencies found in the present-day practice of architecture is due to dishonesty and insincerity is abhorrent. It seems nearer truth to say that we are careless about our definitions, thus getting a false sense of values, and we are shallow in methods of thought and study.

We are trying to earn a living so we must be at least

practical. We are striving to win applause or fame so we must "catch the crowd." We are keen for money and all that money will buy, so we must not keep too fine an edge on our consciences. So we drift, and it is an astonishing sensation when some clear eyed, level headed chap, says to us: "Stop, men. Tell me something. You have been bringing me your contradictory stories, your quarreling and fault finding, your various suggestions, your diverse opinions. The only thing you agree upon is that something is wrong. You want me to tell you what that is. You want me to help you. I am depressed and saddened by the lack of harmony and common purpose among you. I would despair but for your eagerness for light. I dare not think that desire on your part is feigned. I may be able to help you, but I tell you now that it will be only by assisting you to help yourselves. You say you are all architects. How can I find your common denominator? Some of you are doubtless right, but you cannot all be right. I challenge you—Tell me—What *is* an architect?"

Separated from my fellows, backed up into a corner, obliged to "stand and deliver" under penalty of falsehood toward my chosen calling, I muster up my courage, command my faculties to assist me, and I answer bravely, but, I trust, without conceit or egotism:

The word architect is an ancient one, appearing in the Latin as "architectus" and in the Greek as "architecton" (ἀρχιτέκτων). It meant in those days, lexicographers tell us, "master builder." The English prefix "arch" comes from the Greek "archi" (ἀρχι) meaning "beginning" from which we get "archaic," and means "chief, eminent, greatest, principal." There is of course the other Greek word "arche" (ἀρχή) etc. So some have said that the architect is one who merely begins the *work* (τέχνη) and a lot of men are actually claiming to practice architecture who do nothing more than that. The prospective builder is given a roll of blue prints, the "architect" takes his fee, the Owner and the Contractor "go to it," and the "architect" concerns himself about it absolutely not at all.

The architect in history emerges from obscurity now and then to give us a glimpse of himself not "conducting an office" but strictly "on the job." His drawings are lost, but his buildings tell us that he devoted his time to comparatively few "commissions." He seems to have developed a great deal of his work *in situ,* so spontaneous and uncalculated it often appears. He must have been on good terms with all sorts of craftsmen because of the spirit of harmonious good nature expressed in what they did for him. Sometimes he was a Bishop, or a poet, or a painter, or a sculptor. The architect of the past, concerning whom we know anything at all, was possessed by the creative impulse combined with the practical knowledge and ability to express that implse in terms of building. He used the "vernacular." He was not worried about "periods" and "styles." He wrought with faith, and the strength of his idealism abides to this day to haunt us and shame us when we contrast it with our own barren skepticism and materialistic cleverness. He could not have done what he did had he been a mercenary, content with selling an idea and then divorcing himself from the fascinating union of the idea to the inert matter which becomes its manifestation.

In 1901 Louis Sullivan published in an obscure builders' journal a series of discussions on the philosophy of architecture entitled "Kindergarten Chats." Few read them and some who did said they did not understand them, but those little essays anticipated by twenty years the discussion in which we are now engaged. They contain teachings, which, if applied, I verily believe would set us all on the road to an Architectural Millenium.

In Chapter XLII, "What is an Architect?" Mr. Sullivan enumerates a great many factors, human and otherwise, that enter into a building and says: "All these men and all these things enter into the creation of a building, do they not? And yet they are not architects * * * and yet as regards a building the builder has his function, the engineer has his, * * * and so on and on in an ever increasing cycle which extends ever outward from the center to the borders of our civilization and inward to the center. And why? Because Man has a desire to shelter himself and his products from the elements. Yet, so far, we have no architect. And why? Because none of these people and none of these things is called architect. Yet there is a name architect, and therefore there must be a function architect—a real function—a real architect—an architect solus. * * * I want to isolate the architect and study him, just as biologists isolate a bacillus and study him. The bacillus is not the fever, the bacillus is the bacillus. So the architect is not the building, the architect is the architect. The bacillus causes the fever by acting on the body corporeal; so the architect *causes the building* by acting on the body social. The simile is not a nice one; in fact it's rather crude; but it gives you an idea of what I'm thinking.

"But, on the other hand, the architect is a *product* of the body social; a product of our civilization. My simile breaks down here in a measure, but let it go—I'm through with it—So we approach him from two sides—as a product and as an agency; so of course I come at once to his true function, namely the double one: *To Interpret* and *To Initiate.*

"What is he to interpret and what is he to initiate? What is it that justifies the name architect, what is his special, exclusive function? What is he expected to do, and what is he, alone, assumed to have the capacity to do under our scheme and arrangement of civilazation?

"I hereby wave aside from the inquiry, the hybrid-architect:—the architect who believes himself an en-

gineer, a carpenter, a merchant, a broker, a manufacturer, a business man or what not—and never stops to inquire if he is or is not an architect. If the merchant, broker, etc., were architects they would be called architects. Conversely, the architect who deems himself merchant, broker, etc., ceases to be architect and becomes hybrid, just to the extent that he believes it.

"Of course I assume that other men than architects may be and are products and agencies, and interpret and initiate. The dramatist may be such, the merchant is such, and many others; in fact, in the broadest sense, all are such in larger or lesser degree, under the terms and conditions of modern civilization. But not one of these is expected to interpret the wants of the people with a view to initiate buildings. Hence the true function of the architect is to initiate such buildings as shall correspond to the real needs of the people."

Further on in the same essay he says that the architect "must cause a building to grow naturally, logically and poetically out of its conditions." And he further defines an architect as a "poet who uses not words but building materials as a medium of expression; just in the same sense that a painter uses pigments as his medium of expression; a musician, tones; a sculptor, the marble block; a literatus, the written word; and an orator, the spoken word. And like them, to be truly great, really useful, he must impart to the passive materials a subjective or spiritual quality which shall make them live—otherwise he fails utterly and is, in a high sense, a public nuisance instead of a public benefactor."

In the next paragraph he says: "It goes without saying that a knowledge of construction, equipment, methods, processes and workmanship are part of his technical equipment whereby he has the efficiency and power to express the poetic thought just as language and a knowledge of words are the technical equipment of the literatus. It is not, I take it, the words that make the poem; it is the manner in which the words are marshalled, organized and vitalized, that makes a poem a poem. And just so with building materials; they must be vitalized in order that a real building may exist. Therefore, to vitalize building materials, to animate them with a thought, a state of feeling, to charge them with subjective significance and value, to make them a visible part of the social fabric, to infuse into them the true life of the people, to impart to them the best that is in the people—as the eye of the poet, looking below the surface of life, sees the best that is in the people—such is the real function of the architect."

Ruskin said: "An architect must be a great sculptor or painter * * * If he is not—he is only a builder."

It seems perfectly clear that an architect must have a genuine sense of beauty. He must possess this organically. He must have studied it and come to realize how inextricably beauty is bound up with truth and goodness. He must realize that to be an architect he must have something that no one else possesses, so far as building is concerned. I believe that loss of faith in that fundamental principle is responsible, more than anything else, for the condition in which the architectural profession finds itself today. We are hustled aside on the market place because we are considered as not fully accredited. We have ceased to *inspire* and nothing is left for us but to *compete*. And we are competing now not only with each other but with the engineer, the specialist-builder, the plan-factory, the real estate promoter and the increasing number of contractors, carpenter-architects, and their ilk, who feel that their best interests are served by eliminating the architect. And yet—

The architect is now, as always, the Master Builder. His diploma does not define him nor does his certificate of membership in an architectural society. He may be working alone in ignorance of the ethics of the profession. But he must be honest and sincere. He must know his resources and his limitations. He must remember that his responsibility does not cease until the building which he designed is finished. He must be capable of designing a building "naturally, logically and poetically," and able to convey his design to the Owner and the Builder so that they fully understand what he intends. He must be able to superintend the work of the Builder so that the final result will be what he had in mind in the beginning, developed and modified in detail, but essentially the same. He must be free from bias, unprejudiced, fair minded, conservative in all good and valuable things, progressive in dismissing the non-essential, frivolous and bad things. He must, fundamentally, render *service*. Only so may he aspire to honor his profession and only so may he hope to be worthy to call himself Architect. The architect is supposed to be a professional man. The professional man has only one standard of service and that is the highest of which he is capable. The architect must have an understanding mind. He must be able to distinguish between "hero-worship" and "the things which the heroes worshipped." He must accept humbly and thankfully his heritage from the past but must keep himself free and untrammelled in the light of the living present. "To Emulate but not to Imitate" ought to be the slogan. If he must *borrow* let him be careful lest he *steal*. Let him define himself in his thought and redefine himself in his acts and in his work. If the terms of the equation do not balance let him be sure that his *thought* term is high enough and that his *work* term is not too low.

It seems impossible, to me, to formulate a concise definition of what is an architect. Whatever phraseology we employ, if the profession of the architect is to endure, it is mandatory upon us to see to it that our definition is interpreted only in terms of altruistic, high-minded, whole-hearted, persevering endeavor.

Housing and Community Planning

The Plan For Coconut Grove

NOTE: The Associate Editor of the Housing and Community Planning Department of THE JOURNAL temporarily abdicates in this issue, with becoming modesty, in order that there may be presented a piece of his own work—a work so tremendous in its implications as to transcend, in our opinion, any piece of town or city planning work ever done in the United States. Only Letchworth and Canberra offer any parallel for Mr. Bright's economic concepts; and both of these were based upon a completely new departure, whereas Mr. Bright applies the same concept to a town already in existence and which needs, as do thousands of our towns and cities, something more than the physically planned solution of their difficulties due to disordered growth. Mr. Bright shows them the way out, financially, which is what no other American town or city planning scheme has ever done, to our knowledge. THE EDITOR.

Foreword

BY THOMAS ADAMS[1]

IN THE following report, Mr. John Irwin Bright presents us with a remarkable town-planning thesis and a unique solution of the problem of rebuilding the town of Coconut Grove. Perhaps a criticism based on the point of view of those who hold that a town is a mere happening, built up of unrelated and inert parts and incapable of elastic treatment of its surroundings, would be the best kind of a preface to such a report. I am too much in accord with Mr. Bright's argument and solution to give a stimulating introduction.

Mr. Bright looks upon a town as a thing of growth—as something alive and yet not predestined to grow according to an immutable natural law. He does not ignore existing conditions but does not permit them to control and thwart his judgment of what is needed to improve them.

The most radical proposal, and the most original and attractive, is that which suggests the creation of a productive park round the town. Here Mr. Bright takes issue with those who accept haphazard town development as a natural growth and who still believe in the fallacy that land may have a high building value when it adjoins a town even if there is no prospect of increase of population to acquire it for building.

"If", says Mr. Bright, "the town should surround itself with a protective strip of land exactly as the private owner does with his own home it would be free from the danger of parasitic growth." Here is a significant phrase that gives us a new concept of the application of the garden city principle of the agricultural belt. Why, indeed, should a town not have its garden area as well as the dwelling? Is it because land is too scarce on this continent? Or is it because we are not resourceful and wise enough to plan towns on sound principles?

Mr. Bright has come to the conclusion that the only way permanently to reserve a productive park strip is for the municipality to own the land so reserved. On a recent occasion the writer expressed the same view in opposition to those who claimed that it would be practicable to reserve an agricultural belt round a city by means of a zoning ordinance. Undoubtedly Mr. Bright's conclusion is sound. An agricultural belt to be permanent must be owned by the municipality.

As Mr. Bright says, in conclusion, the most effective tool to execute a plan is the control of the value and the use of the land in the best interest of the citizens. I would only add to this that the value should have regard to the use—and that the use should first be fixed by a plan as a condition precedent to the determination of the value for assessment and other purposes.

The estimates which accompany the report are based on information which can only be obtained on the ground. Therefore, the only comment I feel free to make with regard to them is that the fact that they are presented shows that Mr. Bright has faith enough in his conclusions to put them to the test of a detailed financial statement of costs.

The citizens of Coconut Grove may congratulate themselves on the opportunity which Mr. Bright's report gives them to be pioneers in a sound system of town development.

[1]Town Planning Advisor to the Commission of Conservation, Canada.

The Town of Coconut Grove, Florida

A REPORT on its physical, social and economic features with suggestions for their control in the future, divided into two parts: first, a description of the existing conditions and suggestions for the improvement of certain details, and secondly, the study of the problem of the central business area.

I. How it Grew.

The Town of Coconut Grove unlike many others in Florida is of a slow and gradual growth. For the major part of its existence there have been no very serious municipal problems. There always was an abundance of land at reasonable cost and apart from the familiar laws governing property there seemed to be no reason for any public control over its use.

At a convenient road crossing a few shops established themselves but there was not enough trading to cause uncomfortable congestion on the converging roads. It is quite true that the land on the bay front was, almost from the start, held at a relatively high price and was given over to private estates of an average size of over six acres. For climatic reasons the sea coast is the most desirable residential quarter of the town and quite naturally it fell into the possession of the first comers or of the wealthier class of the population. Back of these properties the land was gradually taken up in the usual way, each new resident placing his dwelling as seemed to him best without any thought of the future relation between the separate units of the individuality thus coming into being. For all towns have character almost in the same way as has a living organism and cannot be regarded as a mere agglomeration of unrelated cells. Failure to comprehend that this universal natural law applies to cities and towns as

well as to any other form of evolution results in a deformed, distorted growth. Coconut Grove is no exception to the law. But the principle itself received at times partial recognition for when the question arose as to the respective areas to be occupied by the white and the colored races it was treated from a community and not wholly an individualistic point of view. It is unfortunate that when the agreement was entered into it was done without a proper realization of the influence the mere design of the areas could have upon the welfare of the town. This lack of foresight, fostered by an unscientific road system, and aggravated by the gradual increase of the population has brought about an unfortunate situation. Colored Town, little by little, has taken the form of a wedge with its apex resting on the Ingraham Highway and its base on the railroad, effectually dividing the town into two parts. The district to the south-west of the wedge is nearer most of the Bay Front properties and for that reason is appreciably more valuable than the land to the north-east from which it is isolated except by way of the main highway.

Land Values.

From the standpoint of land values there are four main divisions. First, the bay front land, second, the area lying directly behind it, third, the northeastern part, and fourth, the dividing Colored Town. But this last district is indeterminate in extent and on its borders the land nominally for white occupation is depreciated in value and largely unoccupied. For the present it is sufficient to point out that the high value of much of the municipal land is due to its scarcity or rather to the limited supply of that quality which makes it desirable. Other areas considerable in extent, are depressed in value owing to the unfortunate distribution of population. The isolation of will other areas prevents their settlement. In several stays this group of causes engenders losses or prevents the realization of proper values. The limitation of the desirable portion of the land whether brought about by a deliberate policy or a thoughtless toleration leads to congestion and high prices and increases the cost of living for the inhabitants. It is a system which may be profitable to a few but the net result to the town is a loss. When the land value is depressed by untoward circumstances the loss is more evident but, as in the former instance, it is shared by the great majority of the people.

These four sections may be further analyzed. 1. There are thirty-five Bay Front properties occupying about 220 acres. They form a strip of an average depth of one quarter of a mile and about a mile and a half long. At the northern extremity there is a forty foot road ending at the shore line. A mile to the south there is another road thirty feet wide also giving access to the sea. With these two exceptions the sea front is entirely occupied by private estates. (See map.) 2. The area lying immediately back of the Bay Front land is about 300 acres in extent. While in actual measurement these are the figures yet for reasons presently explained all of the land is not available. It is a residential district devoted to fair sized lots and without overstepping the boundaries of the town there can be no further increase in size. (See map). 3. One hundred and fifty-five acres at the extreme northeast end of the town contain the shopping center and many private dwellings where the lots as a rule are smaller than those at the other end of the town. (See map). 4. By actual count three hundred and five acres are regarded as being within the confines of Colored Town but actually a considerably greater amount should be included. Most of the excess should be subtracted from the second district already described. It forms a wedge with its base on the railroad and its apex just touching the Ingraham Highway. The average density of houses is but slightly more than one to the gross acre, far beyond the economic power of the lessees or owners to properly maintain. This is evidenced by a somewhat bedraggled and forlorn appearance. The population could live more comfortably and under better surroundings on one-half of the land they now occupy.

On Map No. 1 will be shown very clearly the degree of population density and the relative size of each district.

The Street System.

The street system of the town is a combination of two ideas; the direct regional route paying but secondary attention to the local characteristics and a gridiron plan based upon the government geodetic survey. But while the regional roads are planned with a definite though perhaps remote transportation end in view the right angle roads are not influenced in the slightest by any considerations of local convenience. The Ingraham Highway and the Florida East Coast Railway are the two lines of regional transportation paralleling the sea board and serve their purpose fairly well. The railroad is entirely too close to the shore line in its passage through Miami but when it reaches Coconut Grove there is a distance of a mile between it and the sea, a space quite sufficient for the free development of the town.

With one or two unimportant exceptions all the other roads are without change in direction and intersect each other at right angles. The section lines provide a simple and convenient method of land division for purposes of sale and roads naturally follow their boundaries even though the land itself has not yet been brought under cultivation. The law which permits the free occupation for the purposes of roads of a strip of land thirty feet wide, fifteen feet on each side of a section line is another important reason for the checkerboard highway system.

A rectangular system is not wholly bad; there is much to be said in its favor. Within certain limits and between certain points it is direct and the different properties can be easily identified and platted. But when used to excess it is subject to very grave objections. After all the main purpose of a road is to provide a means of getting from one place to another with the least friction expressed in terms of time and money, and when traffic over a gridiron system subjects the community as a whole to unnecessary expense it should be modified in its design or even abandoned in favor of another scheme. Repeated in too many units it becomes inexpressibly dreary and depressing, a disadvantage that can not always be expressed in terms of money but which, nevertheless, is very serious. There is no doubt that the street system suffers from the handicap of having followed in general the geodetic survey lines. Moreover the roadbeds are of an insufficient width to accommodate modern traffic. It is much easier to remedy the latter defect than the former. In each case it is chiefly

SUMMARY SHEET

Block.	Present Land Value.	Number Lots Occupied now.	Value of New Lots Occupied.	Numbers on New Plan.	New Value of Lots Excluding Busines.	Number of New Lots Occupied.	Increase in Value of lots occupied (see detailed sheets.)	Decrease in Value of lots occupied (see detailed sheets.)	Net increase in value of lots occupied.
A	28,000	0	.....	I	8,000	0	.....	.....	.....
B	30,000	3	9,000	II	13,250	1	4,000	500	.....
C	25,000	8	12,100	III	23,000	1	6,525	50	.....
D	20,000	1	2,500	IV	38,000	3	500	.....	.....
E	32,100	8	32,600	V	23,000	7	13,200	4,400	.....
F	27,700	5	14,500	VI	37,500	8	11,550	.....	.....
G	65,000	14	23,000	VII	30,600	10	9,750	5,000	.....
H	274,000	9	75,000	VIII	12,000	2	31,500	6,500	.....
I	129,000	8	54,500	IX	57,500	2	4,000	4,000	.....
J	90,000	12	29,000	X	27,500	8	10,500	500	.....
..	.....	..	.....	XI	34,000	8	.....	.....	.....
..	.....	12	.....	XII	115,000	2	.....	.....	.....
	720,800	68	252,200		419,350	52	91,525	20,950	70,575

Buildings demolished number 16.

OPERATING—*Three Tiers of Bed Rooms in Hotel.*

An issue of interest-bearing securities to cover:

(1) The cost of all buildings		$2,860,000
(2) Value of old dwelling area	$720,800	
Value of new dwelling area	419,350	
Difference	$301,450	
To be settled with exchange of city bonds. (Bal. sheet of Corporation shows $258,700 available) and $22,650 in securities of the Corporation		22,650
(3) Sale of Corporation Securities for working capital		117,350
(4) Total capitalization		$3,000,000

Dr.			Cr.		
Interest on securities at 6%		$180,000	Rent of dwelling lots $419,350 at 6%		$25,161
Group of business buildings.			Rent of Business Bldgs., (Gross profit is 12½% of cost, $1,612,000)		202,500
Insurance and upkeep, 2½% bldg. cost, $1,500,000	$37,500		Rentable space	$300,000	
Amortization, 2% on bldg cost, $1,500,000	30,000		Sq. ft. less 10% unlets	30,000	
Taxes ½ of 1 % of bldg. and land, $1,250,000	8,060			$270,000	
		75,560	Gross Revenue is 75 cents per sq. ft.)		
Hotel, 3 tiers of bed rooms.					
Insurance and upkeep, 5% of bldg. cost, $1,300,000	65,000		Rent of Hotel:		
Amortization, 2% of bldg cost, $1,300,000	26,000		280 Beds x 120 ds. 3360 x 6.00	201,600	
Hotel Mgrs. Salary	10,000		Restaurant, net profit	14,000	
Taxes, ½ of 1%, bldg. and land, $1,425,000	7,125		Baths, net profit	9,000	
Service, wages, etc	33,000		Cigars and Miscellaneous	2,025	
		141,125			226,625
			Gross profit is 15.9% of cost, $1,425,000.		
Garage:			Garage:		
Insurance and upkeep, 2½% of bldg., $60,000	1,500		Rent of outside garages		8,640
Amortization, 2% of bldg., $60,000	1,200		Gross profit 12.34%, 15.00 per month per space.		
Taxes, ½ of 1% of bldg. and land	350	3,050			
General Administration		15,000			
Total		$414,735			
Surplus		48,191			
Grand Total		$462,926	Total Revenue		$462,926

Town of Coconut Grove

BALANCE SHEET FOR THE CORPORATION.

Cost of dwelling area, Sec. A	$720,800	Sale of Central Plaza	$40,480
Cost of Roads at .17¾, Sec. A	65,700	Sale of Road System, 834,000 sq. ft.	166,800
Cost of School Land	7,500	Sale of School Land, 7500 less 900 for remnant on Station Road	6,600
Small Parks deeded to Town, 191,600 square feet	38,000	Sale of School Park Land	82,360
There should be returned to the town 50% of the cost of the Central Plaza and the Road System as the values are largely due to these improvements	103,640	Sale of Bay Front Park, 372,600 sq. ft	230,000
Town Land, Sec. A—		City Hall Land, including above item of 900 sq. ft., 46,400 sq. ft	9,300
Buildings destroyed and moving houses, Sec. A	100,000	Garage Land	10,000
Cost of Present Colored Town	220,000	Business Land @ .831/3	112,000
Buildings destroyed and moving houses in C. T	99,000	Hotel Land	125,000
Cost of Land, Section B	27,000	Residential Land, Section A @ .20	419,350
Golf Links, 60 acres	36,000	Residential Land, Section B @ .07½	146,500
	1,417,640	Residential Land, Section C @ .07½	210,375
		Golf Links	36,000
		" "	36,000
Balance to be used for the construction of roads, landscape work, etc	273,125	Sale of Park Section near Railroad	60,000
Total	$1,690,765	Total	$1,690,765

BALANCE SHEET FOR THE TOWN.

The Town will receive for its land in Section A the present average value of residential land in the area, .17¾ per square foot. The Town will pay for its land the new average value of residential land in the area assumed to be .20 per square foot. In Sections B and C the assumed value is .07½ per square foot.

Purchase of New Road System, Sec. A, 834,000 sq. ft	$166,800	Sale of present Road System, Section A, 370,000 sq. ft @ .17¾	65,700
Central Plaza	40,800	Gift of the Corporation to the Town 50% of the value of the Road System, Section A, and Central Plaza	103,640
School Park	82,340	Two small Bay Front Parks and the four minor Parks	150,000
City Hall Property	9,000		319,340
Bay Front Park	230,000	Balance	269,600
Park Section near Station	60,000		
Total	$588,940	Total	$588,940

BALANCE SHEET FOR COLORED TOWN.

LAND VALUES OLD AND NEW.

Dr.			Cr.		
Purchase of land, 188 acres at $600	$112,800		Sale of present land		$219,000
330 buildings to be moved at $300 per bldg	99,000		275 A @ $600	$165,000	
	211,800		30 A @ $1800	54,000	
Other expenses	7,200			219,000	
	$219,000				$219,000

Assets and Liabilities.

Amount which can be borrowed to be expended for roads, water, electricity or other local municipal needs	$95,700	New Land—	
		310 Occupied Lots @ 300	$93,000
		303 Unoccupied Lots @ 300	90,900
			183,900
Reserve	95,700	Business Land, 37,772 sq. ft., @. 20	7,500
	$191,400		$191,400

Operation of Occupied Areas.

Interest at 6% on Borrowed Amount	$5,742	Rent of dwelling lots, 183,900 @ 6 %	$11,034
Taxes, ½ of 1% of Land Value	957	Rent from Business Land, 7,500 @ 6%	450
Administration	3,000		
Balance for local needs	1,785		
	$11,484		$11,484

a matter of expense and the good will of the property owners. But this is a matter that can best be decided during the adoption of a town plan and it is now only necessary to call attention to the loss borne by the community by reason of a deficient road system. It should not be forgotten that some losses and expenditures can be written off the books but the drain of resources inherent to faculty transportation net can never be amortized. It is a permanent handicap. It takes its toll every day of the year. The only reason why we submit to it is the difficulty of its appraisal in terms of money. Instead of a determinate quantity we are forced to rely upon estimates, which, in the nature of the case, can never be completely convincing. But nevertheless it is possible to weigh with sufficient exactitude the advantage of changing the system in whole or in part.

Outside the limits of the business center there does not seem to be sufficient reason for a radical change in the road map. In its present state it may leave something to be desired but the annoyance and expense of disturbing the property lines, not to mention the new construction entailed, would hardly warrant the outlay of money.

But whatever the cost, the Ingraham Highway must be relieved of a part of the burden of its through traffic. The mere widening of the road bed will not suffice. Freight transportation by means of motor trucks is constantly on the increase and a by-pass must be found. On Map No. 2 is shown a new road for this traffic close to the railroad right of way. It would connect with a similarly placed road farther to the south and with the road system of Miami. It would have the advantage of forming an effective by-pass although very accessible to Coconut Grove and would not trespass on any residential property. The commercial development of South Florida is increasing and now demands more than one regional road. Modern traffic conditions require road foundations, surfaces and widths which cannot always be economically supplied in conjunction with units of a secondary character. But quite apart from any question of road engineering it is very dangerous to have motor trucks weighing, with their loads, many thousands of pounds continually dashing through the center of the town. The construction of this new thoroughfare is one of the first things that should be undertaken.

Even though a new road were built the Ingraham Highway should be widened in its entire traject through the municipality. It is at present but thirty feet wide between fences and it should be twice that width generally and even more in certain places. Through the civic center and for some distances on either side a width of one hundred feet would not be excessive. Suitably planted, the effect of the broad spacious avenue, flanked on both sides by the dwellings which sooner or later will be built, will be most delightful.

There are three troublesome angles in the main highway that should be straightened out. One is in the civic center and receives special attention later on in the report. Another is outside the present limits of the town near the boundary of Miami. Coming from the north the turn is at an acute angle made more difficult by a short but rather steep grade. The third is near the Sunshine Inn and while it is the least objectionable of the three yet the cut-off, illustrated on the maps, would be to some advantage. The distance saved would not be considerable, not over three hundred and fifty feet, but it would permit the treatment, without any structural changes, of the present inadequate primary road as a satisfactory secondary road. It would also release some property values now lying dormant. In a similar way a lane commencing at a point below the rectory of the Episcopal Chapel and ending at the Ingraham Highway and the property of the Adirondacks School would make available some very desirable residential land and would add to the privacy of the Bay Front properties lying between the lane and the water.

There is no mention in the report of the very interesting subject of the beautification of streets; this, as well as kindred other subjects of lighting, drainage, sewage disposal, street furniture, planting and other more or less important details could only be properly discussed in a thorough town-planning report.

The Productive Park.

The modern town almost without exception believes that its prosperity is dependent upon an unlimited physical expansion. It is a conception dedicated to the accumulation of riches, not for the benefit of the city itself but for a small minority of its inhabitants. It is responsible for the twin evils of overcrowding and dispersion which when carried beyond a certain point produce municipal bankruptcy. It can hardly be maintained that living conditions for the majority of the population become more desirable as a city increases in size—indeed the reverse is generally true and the civic consciousness should therefore be alert to prevent immeasurable and uncontrolled growth. The prime function of a city should be to create a pleasant place in which to live. In the case of Coconut Grove geographical, climatic and economic conditions oppose any large massing of people. Also a rather special social factor encourages the adoption of an exceptionally large standard of dwelling lots over a considerable portion of the town. As a preliminary to the platting of the entire area a close study of the subject of population density should be made, but it is probably safe to assume, and for the purposes of this report it has been done, that the maximum number of citizens living in the confines of the municipality will never exceed seven thousand five hundred.

While not without precedent, it is an unusual thing to restrict the growth of a town and it might be well to point out in this connection why such a policy is desirable, and what will in all probability be your fate if you fail to control your own destiny. The city of Miami to your north is growing in leaps and bounds and eventually Coconut Grove will become one of its suburbs—unless you wish otherwise.

It is one thing to determine a certain theoretical size and quite another thing to find a practical way of realizing the ideal. The fixing of a boundary line is of no avail for there is nothing to prevent dealers in real estate from organizing small, incoherent settlements on the outskirts which sooner or later will have to be admitted into the municipality. These small units develope, answerable to no rule but their own. Their street systems and their theory of lot subdivision are very often at variance with a broad public interest, and as they are absorbed, one after another, they

end by imposing their character upon the main body. Now, among individuals such an intolerable state of affairs is recognized and prevented. In the country or a small town each possessor of a dwelling has the foresight to surround his house with enough land to make it impossible for an irresponsible neighbor to build against it. In a city where, on account of the scarcity of land it is impossible to have free standing buildings, the law permits rows of houses, but, in greater or lesser degree, assures light and air to each owner and also free access to the front and rear of his property. The city, while protecting the individual from agression, has for itself no effective control over new settlements which may attach themselves to its boundaries and as a result of its helplessness it frequently discovers that its future state is determined for it by interests entirely separate from its own. The modern city plan is a house without outside walls; acres and acres of floor space but no walls!

There is a very simple remedy at hand for our aimlessness. If the town should surround itself with a protective strip of land exactly as the private owner does with his own home it would be free from the danger of parasitic growth. The relief which it would enjoy would be absolute, untempered by any fear of the future.

For the principle of the protective girdle there are, fortunately, several recent and very successful examples. The most noteworthy is at Letchworth, England, a town of approximately the same area and population as Miami. The Zone, containing about 2,600 acres, serves the double purpose of protection and production, for it is intensively farmed and is the source of supply of much of the food required by the town. The land, while leased to farmers and other cultivators, is owned by a corporation holding the property in trust for the benefit of the inhabitants. Eventually the title is to be vested in the municipality. The major part of the strip should be deep enough to serve as a barrier against outside interference and of an area great enough to be cultivated economically. It is for this latter reason that it is termed on the diagram a "Productive Park Strip." It is essential that this land should be under municipal ownership, or at least held in trust for all the citizens, and for legal reasons it would be considered a park. In many cases the lessees would be able to live in the town and still cultivate their properties, and even if it seemed preferable to remain on the farms or groves they would in all cases be near enough to the town to be able to enjoy all its advantages. As far as the groves of Coconut Grove are concerned the isolation of the tillers of the soil would be a thing of the past.

On the map the idea is shown in diagrammatic form. There is no attempt to reduce to figures this part of the scheme for the reason that the outlines and extent of the park cannot now be foreseen. There is no reason that the contour should be even—there is every likelihood that it would not be—so a statement of principles together with an assumed extent of 1,354 acres is thought to be sufficient at this time.

II. The Civic Center.

The present center of business is on a 300-foot length of the Ingraham Highway just south of Grand Avenue where the roadway is widened from thirty to fifty feet. It is a perfect example of what has already been called the twin evils of overcrowding and dispersion and it is almost unbelievable that a town so sparsely settled as is Coconut Grove should have a congested area, yet, in this small district, traffic and pedestrians are huddled together in a most uncomfortable way. Coming from Miami, it is the front door of the town and it cannot be denied that the impression produced upon the beholder is distinctly unfavorable. Today the discomfort may be supported with difficulty but tomorrow there will arise a quite intolerable situation and before values of land and buildings can increase to such an extent as to make impracticable the needed changes, the town authorities have wisely decided to investigate the means by which a better order can be instituted.

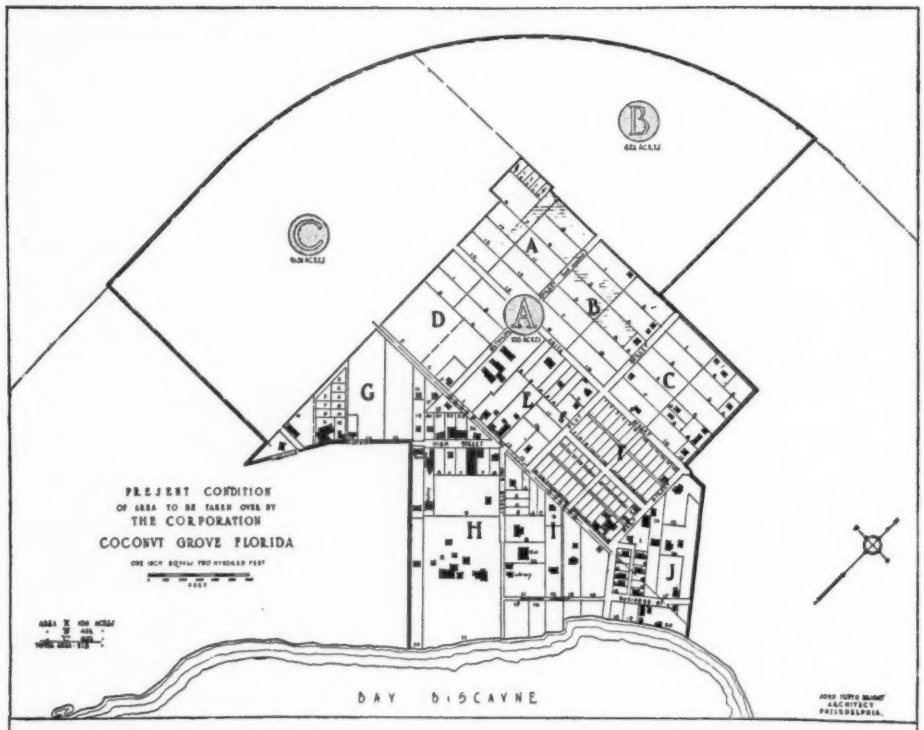
At the inception of the idea the usual difficulties began to appear. The town government, to achieve any real reform, would have to be endowed with powers to plan, zone, to regulate the number of houses to the acre and the size of the house to the lot, to own and administer various enterprises and to condemn land in excess of actual requirement. It possesses none of them in workable form and probably could never obtain the right to excess condemnation, the constitutionality of which, has not yet been fully decided. The municipality would have to petition the legislature for any powers which it does not yet possess, and under the most favorable circumstances much time would probably elapse before any relief could be expected.

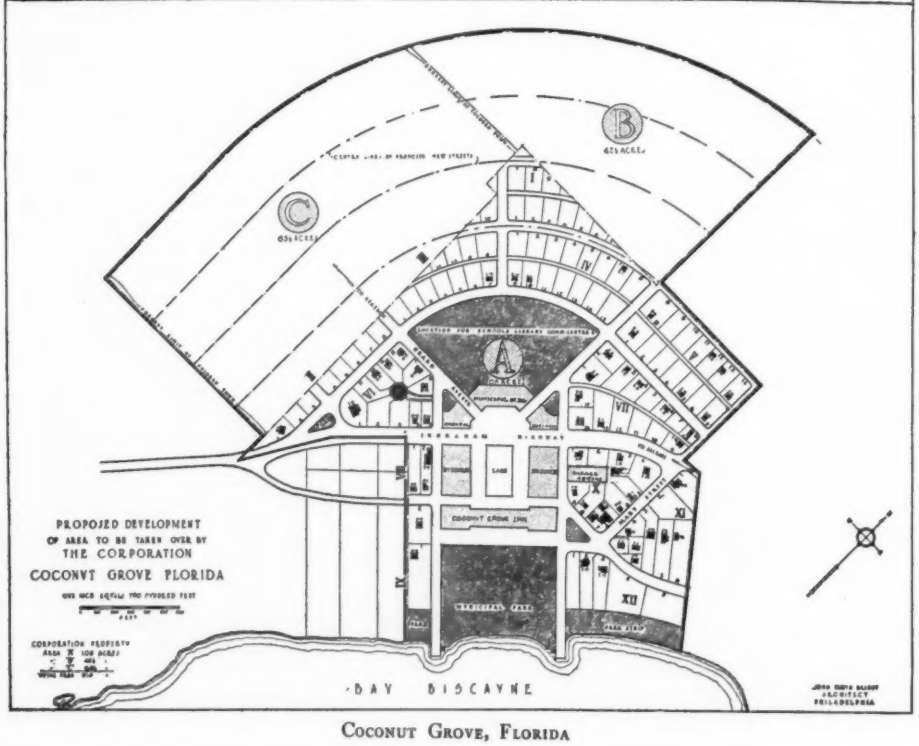
Contrasted with the impotence of the city, which has no powers save those delegated to it by the State, the individual may exercise all the rights which have not been taken from him. He may plan and zone and do many things with his own property and for this reason the simple expedient has been adopted of forming a corporation to take over all the necessary land and by a flanking movement to capture for city planning the heights occupied by the private citizen.

It must be clearly understood that what is being attempted is a program for the future—one which may take some years to bring to its fruition. Had it been the intention to finish immediately the entire group of buildings a radically different scheme would have been presented.

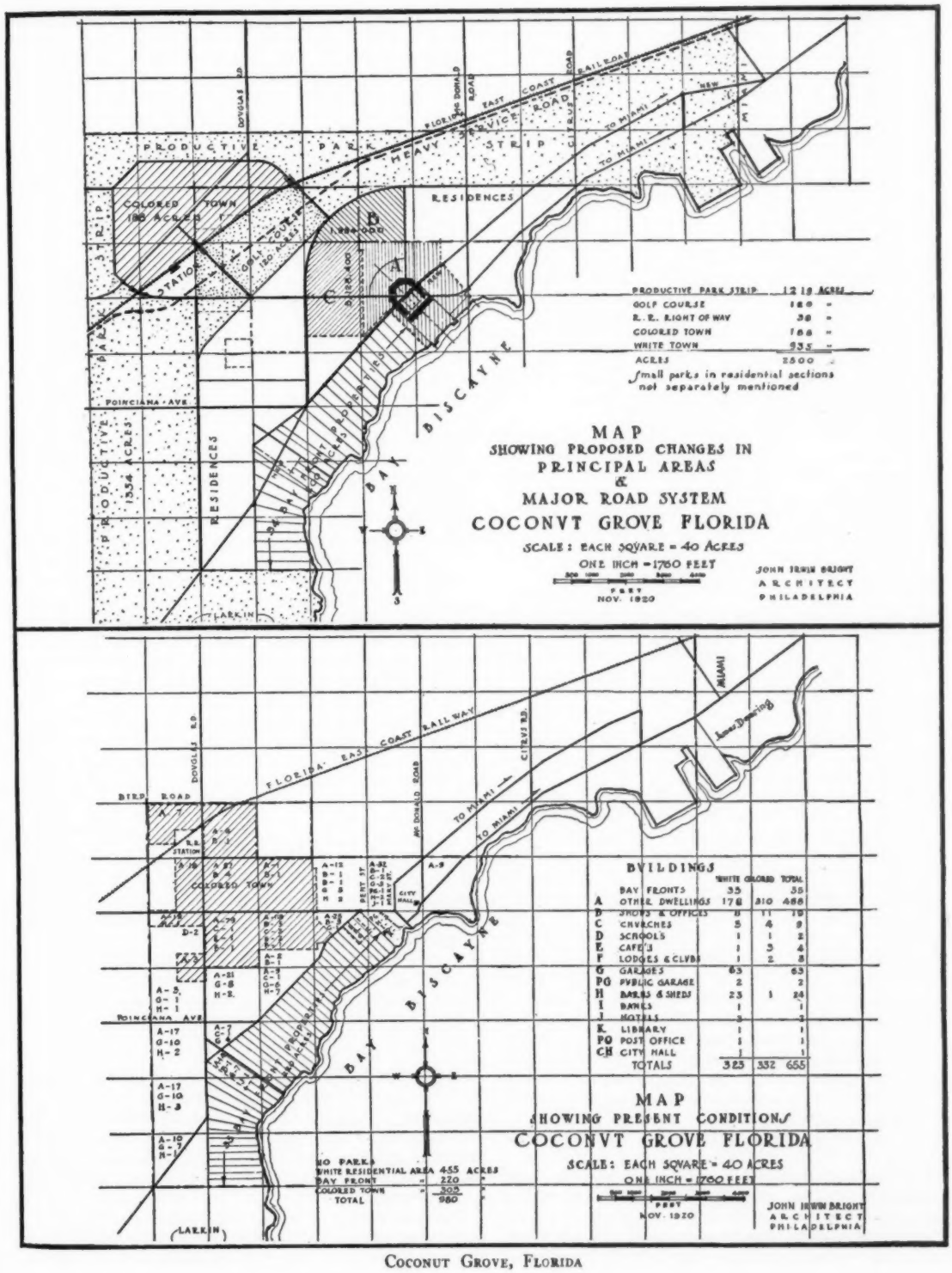
It is evident that a mere building scheme, even though of the simplest character, would require capital for its execution, all of which, under ordinary circumstances would have to be supplied from outside sources. What reason is there to suppose that the returns would be sufficient to interest local investors? Not to mention the general public? A replanning of a sufficiently large area invariably reveals unsuspected mines of wealth. Why should it not be used in this instance for the benefit of the community which creates it? The old values can remain as they are. Some of them may seem to be rather high but taking it by and large the increase revealed by the substitution of an ordered plan for a disordered plan is very large. It is available if held in one block, not otherwise, and the establishment of a corporation with all the present land owners as share holders is the answer to the riddle.

The company would buy the land now belonging to the individuals and would proceed to plan and build upon a large scale. How land value is now dissipated and how it could be made useful under a different conception of owner-





Coconut Grove, Florida



		WHITE	COLORED	TOTAL
	BAY FRONTS	35		35
A	OTHER DWELLINGS	178	310	488
B	STORES & OFFICES	8	11	19
C	CHURCHES	5	4	9
D	SCHOOLS	1	1	2
E	CAFE'S	1	3	4
F	LODGES & CLUBS	1	2	3
G	GARAGES	63		63
PG	PUBLIC GARAGE	2		2
H	BARNS & SHEDS	23	1	24
I	BANKS	1		1
J	HOTELS	3		3
K	LIBRARY	1		1
PO	POST OFFICE	1		1
CH	CITY HALL	1		1
	TOTALS	323	332	655

Coconut Grove, Florida

ship can be seen from an inspection of the financial sheets. The balances for the town and the company practically neutralize each other, but the new plan shows broad roadways and spacious parks where none existed before.

Several factors influenced the size and location of the area selected.

Section A on account of its compactness and present property lines but chiefly because it is the natural civic center and the business area.

Section C because it facilitates the relocation of Colored Town.

Section B because it will make easier the readjustment of the road system of the town.

A corporation is an Individual in law. Its estate is subject to the laws of the commonwealth but within the confines of its borders it possesses enough of the rights of the individual to serve our purpose.

It is proposed:

That each land owner, within the geographical limits prescribed, exchange the title to his land for its full value in obligations of the new company.

That the plan of the estate should be considered as one of its chief assets, and that the new location for any house should bear a definite value; that the difference in value between the new and old locations should be credited or debited to the individual. That such differences should be regarded as debts against the company or the individual as the case may be and should be liquidated as such time and in such manner as can be subsequently decided.

In order to fully illustrate the point a schedule has been prepared showing how the change could affect each individual owner in Section A. The land values, both new and old, are believed to approximate the truth, but must not be regarded as absolutely correct. The changes in location shown on maps and schedules are only to exemplify the scheme. In practice new sites sould be chosen by the stockholders themselves and as there are many more lots than present owners the rearrangement would entail but little difficulty.

It is also assumed and so noted that certain buildings can be moved and certain others will have to be destroyed—the entire cost to bo borne by the corporation.

The ownership of the land is vested in the corporation, owned in turn by the holders of its obligations. It would be advisable however, to base control upon units of ownership rather than upon units of money value. The latter conception is one of physical force and however justified in a business organized essentially for profit, would be of doubtful expediency in this venture. It is true that financial failure must be guarded against and money arrangements must be sound and clear. But we have here quite a different case permitting some deviation from usual business technique. This great effort is not undertaken in order to "make money." An ideal is sought after and this ideal can be summed up in a few words: "To make Coconut Grove a pleasant place in which to live."

Long term leases with readjustment periods are recommended.

In the case of a lessee desiring to surrender his stock ownership it must first be offered for sale to the parent company. All the details of such an agreement should be worked out with the parties interested but the main lines are very simple and, save a provision against speculation in leases, differ in no essential detail from the familiar stock company.

Example No. 1: Lot No. 16, Block G. Map 3: The schedule shows the present land value to be $600. For the purpose of illustration the house is moved on Map 4 to Block VI, No. 6, the value of which is $3,000. If this should be in accord with the desires of the present owner he would be expected to take up stock in the company to the amount of the difference of the two sums. His house would be moved at the expense of the corporation and would remain his property if he so desired.

Example No. 2: Lot No. 19, Block G, Map 3: The schedule shows the present land value to be $4,000. The house upon it is assumed to be transferred to Block VI, Lot No. 4, shown on Map No. 4, the value being but $2,000. The present owner would receive $2,000 in stock of the Company in addition to the value of his own lot. As before the ownership of the house could be vested in the tenant.

Example No. 3: When a house is marked "demolished" on the schedule the owner may or may not choose a new location. His decision would not affect the principle of compensation for his land and buildings.

The balance sheets show the idea pushed to its logical conclusion. The corporation is the ground landlord and its tenants may or may not be stockholdres in the interprize. The corporation purchases the areas A, B, and C, the land now known as Colored Town, the part to be devoted to a new Colored Town and enough land to complete the golf course. It sells back to the city at a unit price all the land required for streets, parks and other public uses. The school receives its land back at its original price The company returns title to all the remainder, although it might be preferable to form a separate corporation for Colored Town.

The company would not only lease the residential land but also the land used for business purposes. It is here especially that large increments can be realized. In order to complete the picture the company is assumed to erect and operate the buildings. This is fully explained in the financial schedules.

Several important details have been omitted; *e. g.*, the returns from the land in areas B and C and the financing of the new buildings for Colored Town as the necessary special information was not available at the time of the writing of the report. It is true that the calculations are based upon the book values of a running concern but on the other hand no mention is made of the amortization of the debt and the returns from areas B and C, factors which would steadily strengthen the financial condition of the company.

The Road System.

From a point in the Civic Center are drawn five concentric streets uniting the highway systems of both wings of the towns. They provide a natural way for local traffic to by-pass the Plaza. Fortunately most of the road work in the Corporation's estate is on freshly planned territory where there is a total absence of the handicap of old property lines.

The quadrant of roads in the rear of the City Hall gives that concise form to the plan which is of the first importance in the economical administration of public

services. Only the main roads are shown. In its passage through the business center the Ingraham Highway is 100 feet wide whilst all other streets are 60 feet. No attempt is made at this time to suggest details of design, planting and lighting. The highways outside the Estate have already been described.

The Buildings.

Although the Construction Program is for the future there is no good reason why some of it sould not be started at the present. If followed without change in its salient points it would definitely terminate the era of unrelated individual effort which is responsible for the prevailing unsatisfactory and uneconomic conditions. The cost, financing and operation of the group and the surrounding parks and open places are fully explained in the several balance sheets, based, it should be remembered, on the premise of a going concern. But a word of explanation of the design and method of construction is necessary.

The Municipal Building.

The municipal building is placed upon land owned in fee simple by the city. In plan and elevation it follows the classic precedents found in Cuba and Spanish America. The style is characterized by open interior court-yards treated in a simple and intimate fashion, high ceilings and exterior arcades. But little decoration is employed, the design consisting almost entirely of flat wall surfaces pierced with openings harmoniously spaced. The only important ornament is the sculptured group over the central entrance. Upon entering the main portal, a few minor offices and two interior courts can be seen through a perspective of arches. Two flights of stairs and elevators give access to the second floor where the more important administrative work is transacted and where the Assembly Room is placed. On the wings are the Departments of Police and Fire. Their entrances are upon the radiating main streets

The plaza and the public gardens in the rear are connected by a triple row of arched passageways running under the building.

The Business Buildings.

The Business Buildings are five in number, four on the plaza and the public garage outside of the main group proper. Their plans and elevations harmonize with the architecture of the City Hall and they are so arranged that when the need arises, they may be built in sections. The interiors can be readily altered to suit any purpose.

Some definite suggestions are shown. The Post Office is placed on the corner of the Plaza and the road leading to the Station. The banks, for more than one may be desirable, are stationed at the ends of the line. A Theatre occupies the center of one of the large side buildings and opposite to it is the Garage and Machine Shop. The entrance to the Theatre is from the Plaza but the Garage opens upon the bordering street in order to preserve the sidewalks and roadways of the central square free for pedestrian and ordinary traffic. An automobile show room is provided and above the repair shop is a dead storage space. On the other side of the street is a low one story public garage. The general public enter into an interior courtyard, and the surrounding residents have private entrances from their own properties. A group of three graceful water towers, visible form afar, will from a distinctive landmark to the town. One is on the public garage, another is over the private octagon garage to the southwest of the Plaza and the third breaks the skyline of the hotel.

The rest of the business buildings are devoted to shops around interior courts into which delivery wagons may enter thus concealing from public view all rubbish and litter. An arcade entirely surrounding both of the large units and partially surrounds the small units. It will not only serve as a shelter from inclement weather but is architecturally beautiful and screens from view disfiguring bulk windows and signs. Stairways and pushbutton elevators give ready access to the second floor which may be devoted to several uses. Some shops will require two stories. Offices will be demanded and in the portion near the hotel apartments would no doubt be popular. Each apartment would have in front of it the promenade over the arcade and through ventilation would be afforded by the open court in the rear. Service from the hotel could no doubt be provided.

The Hotel.

Only one plan is shown for the hotel although the financial sheets describe the returns from two tiers or three tiers of bed rooms respectively. Owing to the control over the land value the building need not be starved to pay for the site. Indeed this is the keystone of the whole scheme. The land for each building is fixed at a certain level not because it is the price that could be obtained in the open market but because it is in accord with the whole financial framework of the corporation. If the conception is good economics it follows that it is economical.

Although the hotel is more generously planned than is usually the case, the charges under the management of the corporation are very moderate. All the bed rooms are open on the outer walls, and are entered from an open corridor surrounding interior courts. At one end is the bathing establishment with Turkish baths and a swimming pool; at the other end is the kitchen. The main dining room is on the ground floor with galleries convenient to the ball room. The hotel is placed at the lower end of the Plaza and commands a view of the bay across the public park. From the other side the City Hall is seen with its image inverted in the central sheet of water. Four rows of coconut trees border the artificial lake screening the soft yellow of the enclosing walls with their green and picturesque foliage.

The Lake.

The lake, while considerable in extent is very shallow and its cost is almost negligible when compared with the entire program. But it is in the highest degree decorative and would wonderfully enhance the beauty of the surrounding buildings.

Colored Town.

The unfortunate situation of Colored Town has already been described. The only way to solve the problem is by a replanning which should be undertaken in the interests of both races. Entirely apart from money considerations a better living and economic standard will result from the reform.

In lieu of the 305 acres now considered to be Colored

Town the new suburb will contain about 188 acres. But while Colored Town at present is mostly a wilderness the new plan will show the houses gathered in an orderly way around a beautiful central group. At present there are three hundred and ten dwellings scattered over the landscape. The new scehme shows the same three hundred and ten dwellings, moved and installed without expense to their owners, to an improved environment. Three hundred and three additional lots are ready for occupancy. There is no crowding. The individual holdings are considerably larger than under the old order. Ten per cent of the area is devoted to parks and open spaces. When established it will be possible to provide the necessary public utilities most of which are now economically impossible. The plan is much like the quadrant near the Civic Center except that the road system is the half of an octagon ininstead of being part of a circle. The Plaza contains the semi-public buildings, much smaller than those on the Ingraham Highway, but of the same quality of design. The Town is surrounded by the Productive Park and in addition there are placed among the dwelling groups a number of small pieces of public land to be used for play grounds or for purposes of cultivation. There will always be some individuals who will welcome the change to take care of more land than is contained in their own holdings, and these unalloted spaces lend a much-to-be-desired elasticity to the scheme.

On one side of the center is placed a large bath-house for men and on the other side a bath house for women and a day-nursery. Here children can be cared for while their mothers are about their work. The railroad will be spanned at thre points by overhead bridges eliminating the dangerous grade crossings.

If it is decided to put the scheme in operation the corporation will buy all of the land now known as Colored Town as well as the land for the new village. The area after having been planned will be sold back to the people who are living there or to a corporation representing them. The new ownership might take the form of a corporation underlying the original one. In order to encourage independence of action without jeopardizing success a benevolent leadership might be very necessary.

The profit to the negro will chiefly lie not in money but in the improved living condition that will inevitably be brought about.

Type of Construction.

The construction would no doubt be similar to that already familiar in Coconut Grove. A cement block covered with stucco, when carefully handled, is a satisfactory material and it would be desirable to use the native stone for corners. The elements of the design are extremely simple and repeat themselves in a way which will result in great economy of construction. Most of the arches are of one size and could be cast in concrete from one mould and set up when desired. The same unification holds good for the other details.

Summary.

The position of the war memorial received more study than any other part of the plan. For many reasons it was decided to depart from the customary, free standing monument and use a wall treatment. The main road curves as it approaches the plaza placing the memorials in direct line of sight. Taken in conjunction with the entire plan there is no doubt that a decorated wall surface would be much more satisfactory than any form of shaft or isolated sculpture. Several types are suggested in the appended sketches.

The financing of the parks is shown on the balance sheets. There is no item set aside for their beautification as the choice between a simple and an elaborate scheme could better be made at some future time. They form a nucleus of a park system which should receive much further attention. They provide a proper setting for all the public, semi-public, and important business structures now and in the future. Other more intimate spaces would no doubt be desirable but can only be adequately discussed in a complete town planning project.

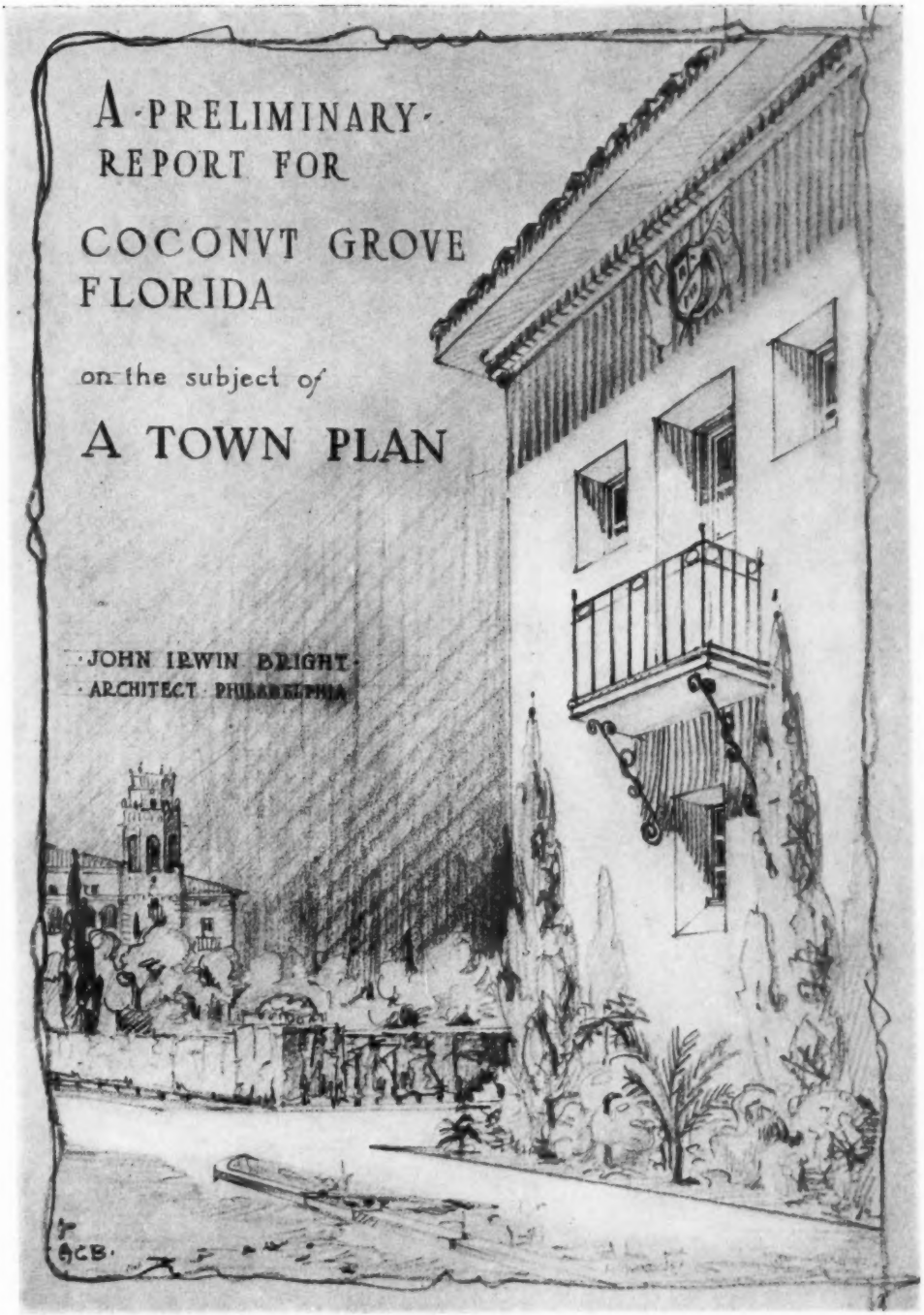
The description of the plan and the economics of the civic center and its surrounding dwellings and parks form an answer to the oft repeated question, "How can a town plan be executed?" Quite apart from public spirit and inclination the tools must be at hand and among them the most effective by far is control of the value and the use of land in the best interest of all the citizens. It is the chief means by which the realization of the ideal is attained

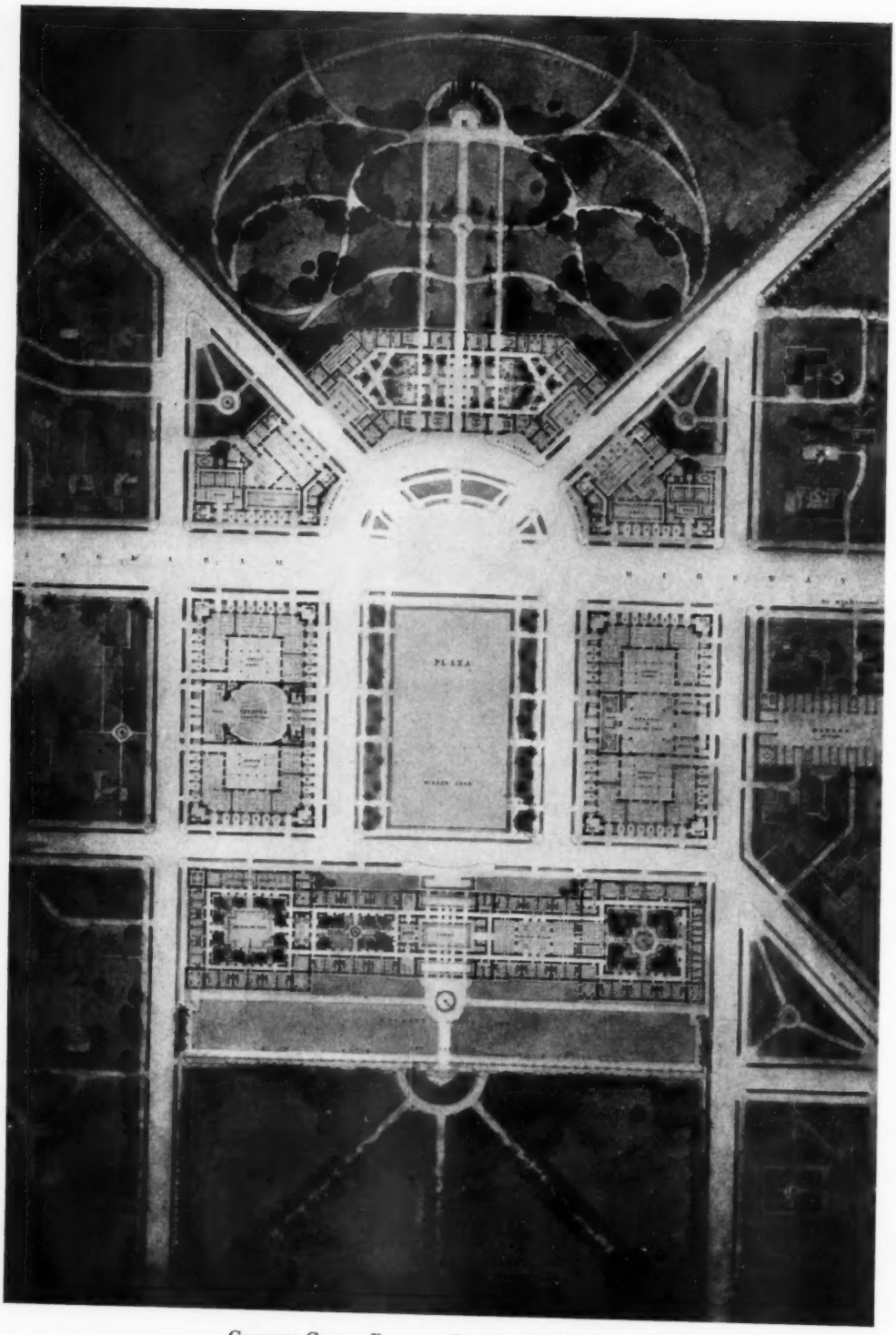
JOHN IRWIN BRIGHT.

Drastic Regulation

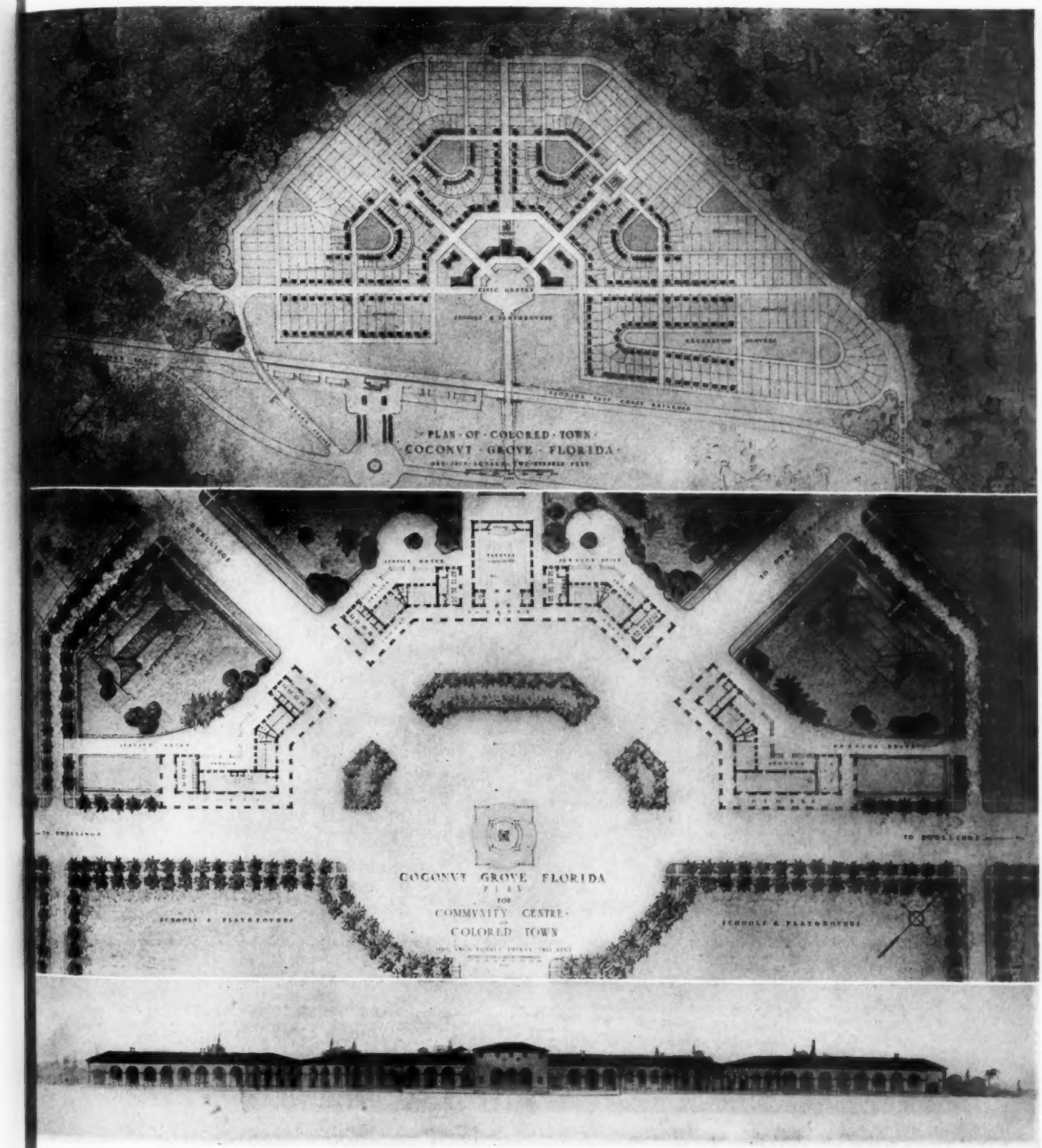
THE MEETING of the New York Chapter in March was attened by 121 men, and the number no doubt indicated the extent of the interest in the proposed amendment to the Building Code of New York City. Seldom has so drastic a remedy been suggested as a correction of evil. Briefly, the new law would compel registration of all individuals under provisions for determining competency, connected with the essential processes of erecting buildings in New York City, and would cause a forfeiture of their registration certificate, for *any* "wilful" violation of the code, for two years. Mr. Rudolph Miller, the Superintendent of Buildings, explained the law to the members of the Chapter, and the Chapter testified as to its unlimited confidence in Mr. Miller. Generally, there was no question in theind m of those present as to the desirability of putting an end to present evil and dangerous practices in violation of the New York Code, but there was an almost equal agreement that the punishment should be made to fit the crime, and that even the word "wilful" would not act as a deterrent to graft and corruption in the administration of the law, were any future superintendent of buildings at any time so inclined. Possessing a colossal power, he could extract tribute or conduct political espionage to an alarming and dangerous extent.

Mr. Miller believed that these things were safely obviated by giving to architects and others the right of appeal to the Board of Appeals, and by a clause which would compel the Superintendent of Buildings either to grant a Registration Certificate or state his reasons within ten days, but there still seemed great doubt in the minds of the Chapter members as to whether those safeguards were sufficient to thwart the too well known corruption which runs through all civic administration, wherever it is subservient to political interests. The question of supporting or of disapproving the bill was laid over for another meeting.

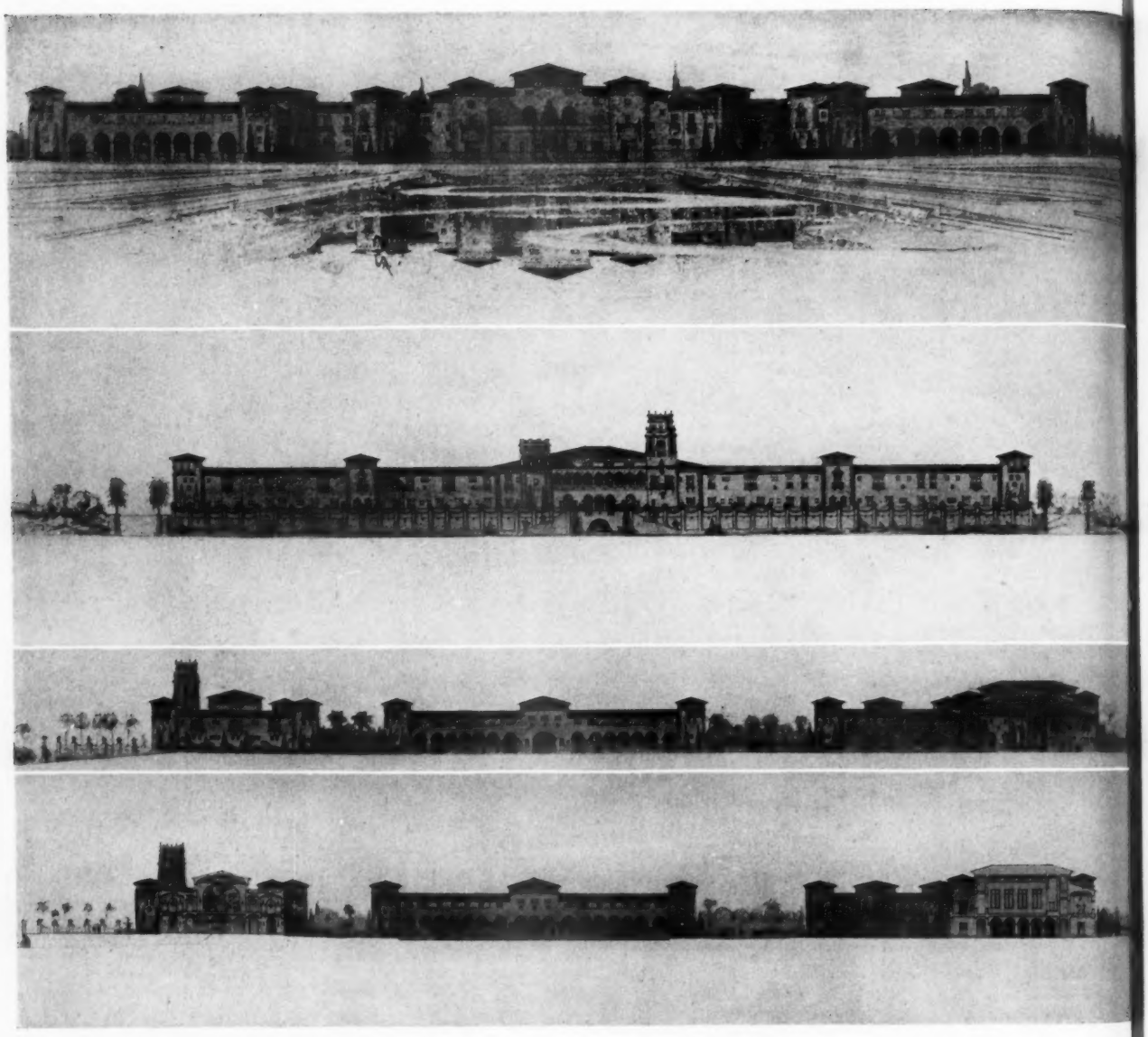

A·PRELIMINARY·
REPORT FOR
COCONVT GROVE
FLORIDA
on the subject of
A TOWN PLAN
·JOHN IRWIN BRIGHT·
·ARCHITECT PHILADELPHIA
JCB.



Coconut Grove, Florida: General plan Civic Centre

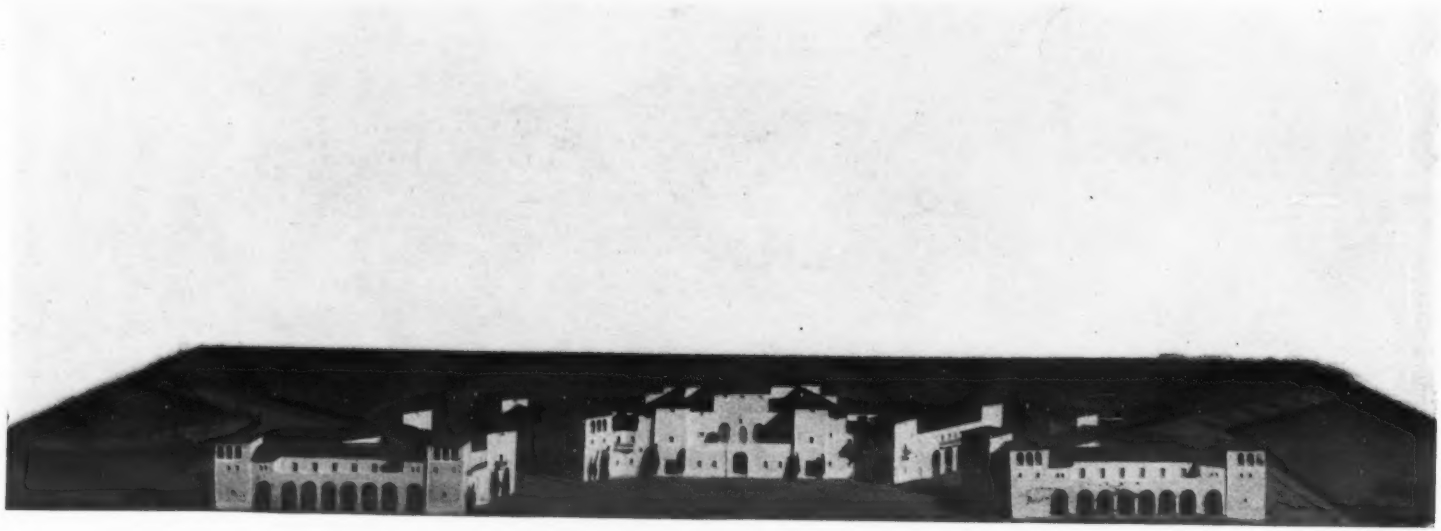


Coconut Grove, Florida: Plan of Colored Town, with plan and elevation for Community Centre

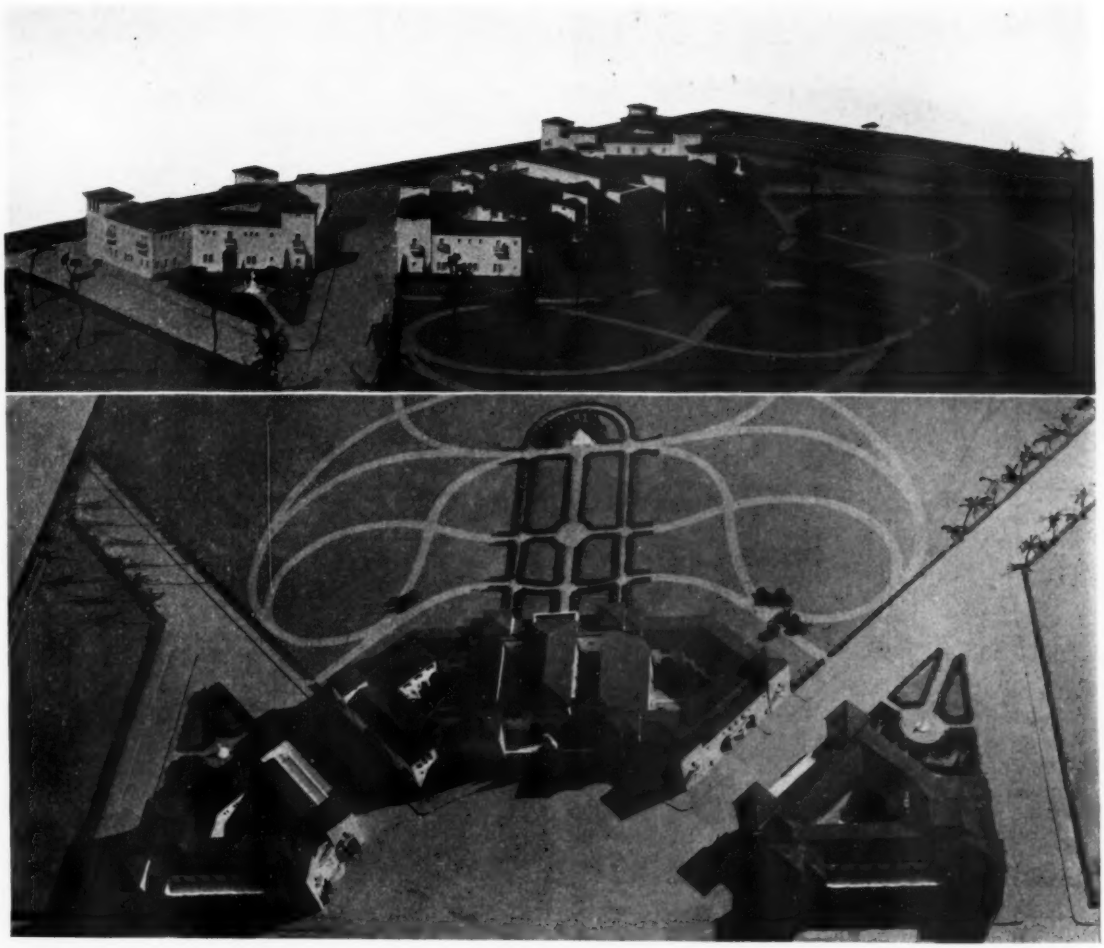


ELEVATIONS OF BUILDINGS ON THE CIVIC CENTRE: Coconut Grove City Hall and Business Buildings; Hotel; side elevation of Plaza; section through Pla

Coconut Grove, Florida: Entrance to City Hall



Elevations of the Model. Municipal Group, Coconut Grove.



Perspective Views of the Model. Municipal Group, Coconut Grove.

SHADOWS: First Act—Enter the Prince

SHADOWS: Third Act—Afternoon; the shadow lengthens

SHADOWS: Third Act—The Shadow strikes

SHADOWS: Third Act—He prepares to follow his Prince into the Great Silence

IPHIGENIA IN TAURIS: Metropolitan Opera. Designed by Howard Greenley

SEPTEMBER MOON: A Japanese fantasy. Written, designed and produced by Howard Greenley

A Kiss for Cinderella. Designed by J. Monroe Hewlett

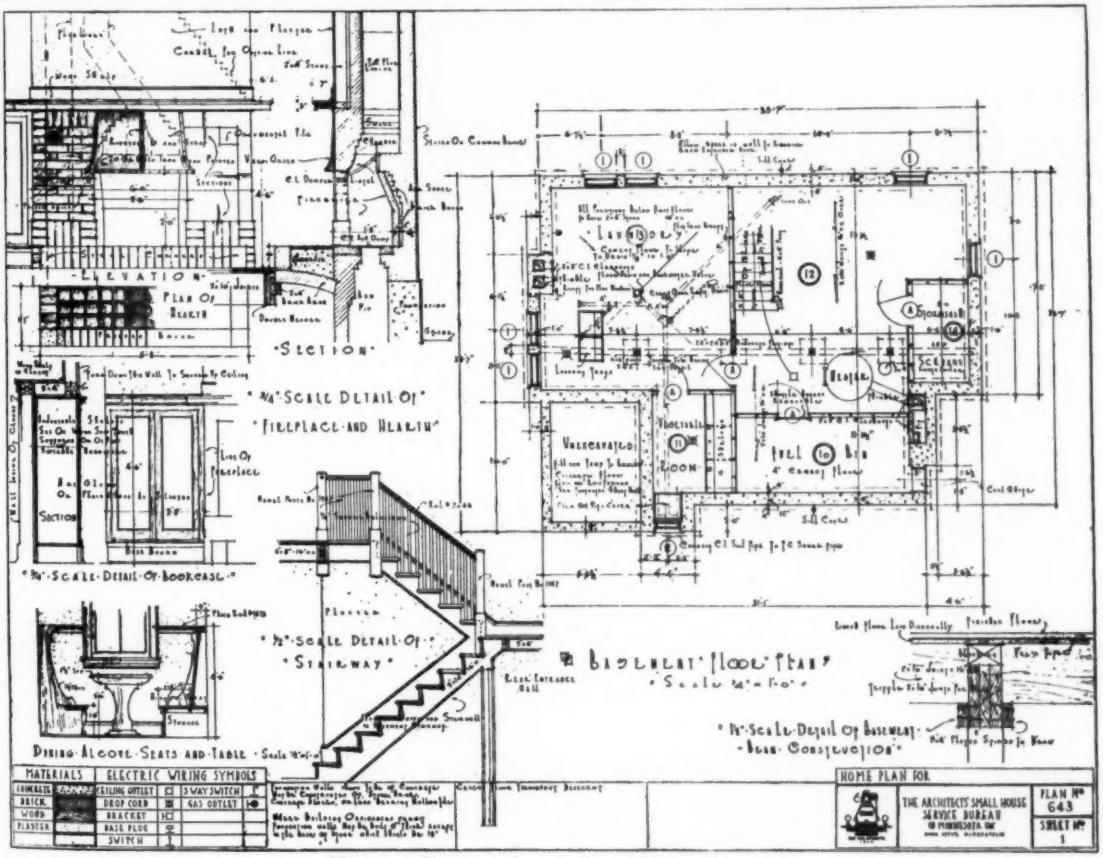
Architects' Small House Service Bureau of Minnesota, Inc.

Through the Committee on Small Houses of the American Institute of Architects the plan of organization and proposed operation of The Architects' Small House Service Bureau of Minnesota was presented to the Institute at its Convention held at Washington, D. C., in May of 1920. It there received the endorsement and approval of the delegates in Convention assembled and was encouraged to continue. It presented to the Institute its first publication, "How to Plan, Finance and Build YOUR HOME," outlined its thought of operation, its proposed methods of advertising, and the service it intended to give.

Practically one year has passed since that time. The Bureau proceeded along very quiet and modest lines, advertising in a small way only because of lack of funds. The results of this desultory work were most surprising and the Bureau discovered that it had a very large and difficult problem ahead of it. It was slowly working out a means to meet this problem when the answer arrived in a very interesting manner. The solution of this problem is practically accomplished and by the time this appears in print the Small House campaign of the Bureau will have been launched in a thorough and surely successful manner.

Such interest was taken in the small but definite statements of the Bureau's early advertising that papers all over the country reprinted bits of it and gave considerable editorial space thereto. Some time, about July of 1920, Mr. Maurice I. Flagg, Director of Sales of the Bureau, received a communication from Mr. King H. Pullen, Acting Trade Extension Manager of the Southern Pine Association, inquiring into the Bureau's methods and policies. Too much credit cannot be given to Mr. Pullen and the Southern Pine Association for both seeing an opportunity and taking advantage of it. They have proved to be the most desirable clients that could be imagined.

Following an interchange of letters Mr. Pullen visited Minneapolis and met the members of the Bureau. After looking into the work they had done, were doing and planned to do, he asked them if they could undertake to issue a book of one hundred different house plans, with full working drawings, specifications and Bills of Material or Quantity Surveys for the Southern Pine Association. After due deliberation a Contract was entered into with the Southern Pine Association along the following lines:



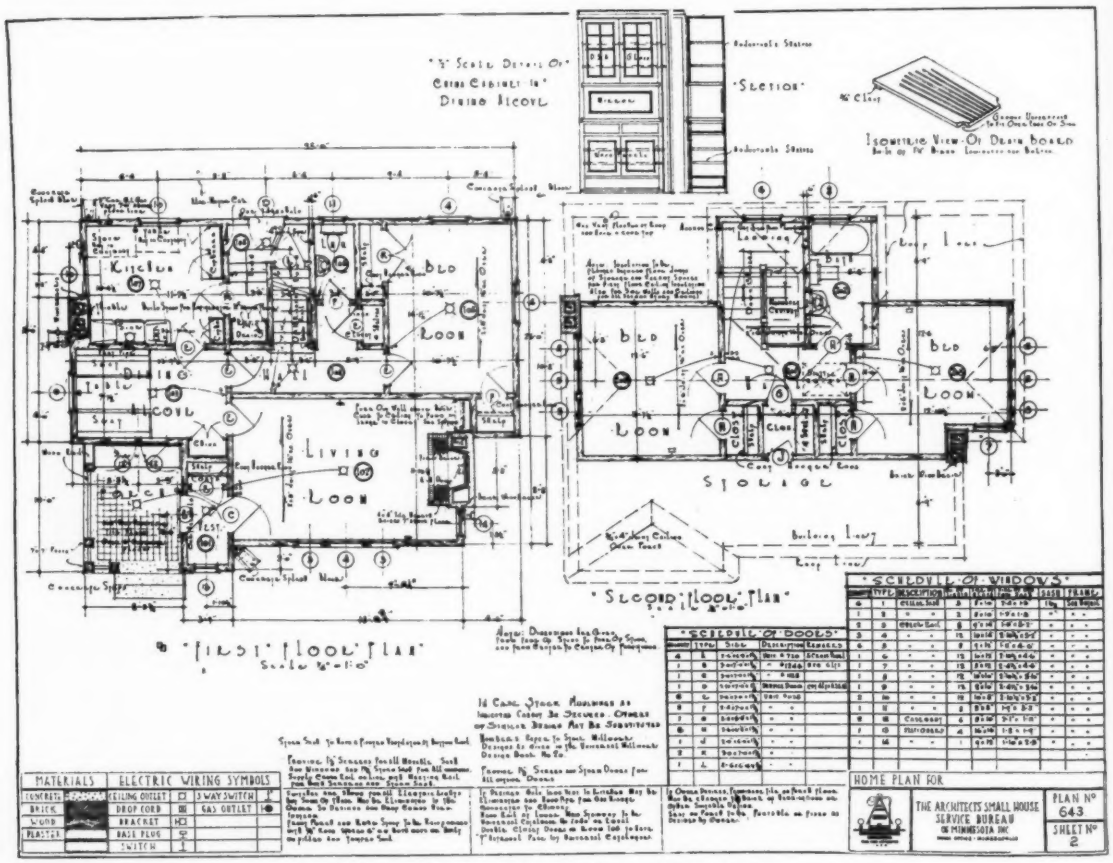
WORKING DRAWING SHEET—SMALL HOUSE BUREAU

The Bureau to provide one hundred complete sets of plans for homes of three, four, five and six rooms, together with specifications and quantity surveys; the Bureau further to provide all the editorial matter covering the entire procedure of planning, financing, and building homes; all of this to be turned over to the Southern Pine Association by January 1, 1921. The Southern Pine Association, as its part of the contract, was to pay for publishing the above work in a proper book as soon as the material was received; the Southern Pine Association was further to carry on a national campaign of advertising the Service and was to place the books and plans in the hands of its thousands of sales offices throughout the country. All of the advertising and editorial matter was to be subject to the scrutiny and control of the Bureau and all of the work was to be carried out in a spirit of strict accordance with the ideals and ethics of the American Institute of Architects.

The Southern Pine Association, much to the gratification of the Bureau, took the broad gauge point of view that real service rather than a straight campaign for the sale of lumber was the main requisite. So the designs and plans in the book cover all types of homes; brick, hollow tile, stucco, as well as all wooden construction. The writer wishes to express his gratification at the cooperation and readiness of both the Bureau and the Southern Pine Association in keeping strictly to any rulings or suggestions laid down by the Committee on Small Houses of the Institute. The contract was signed late in July, 1920. The Bureau was somewhat puzzled as to how to tackle the problem and it was well into September before they had arrived at a method or even an appreciation of the enormous problem that they had taken on so blithely.

To one who has never attempted such a problem the difficulties and puzzles that arise in laying out a program covering one hundred different homes, based on the demands of the United States in general, without duplications, without, so far as is possible, omissions of desired types, cannot be imagined. A special committee of the members of the Bureau spent nearly a month in laying out the program. This program was then divided among the different members asking for pencil sketches to be submitted by a given date. These sketches were then analyzed by the committee, accepted or returned for further study, until the complete program in sketch form could be visualized.

In the mean time the Working Drawings Committee had been busy working out the number and size of sheets,

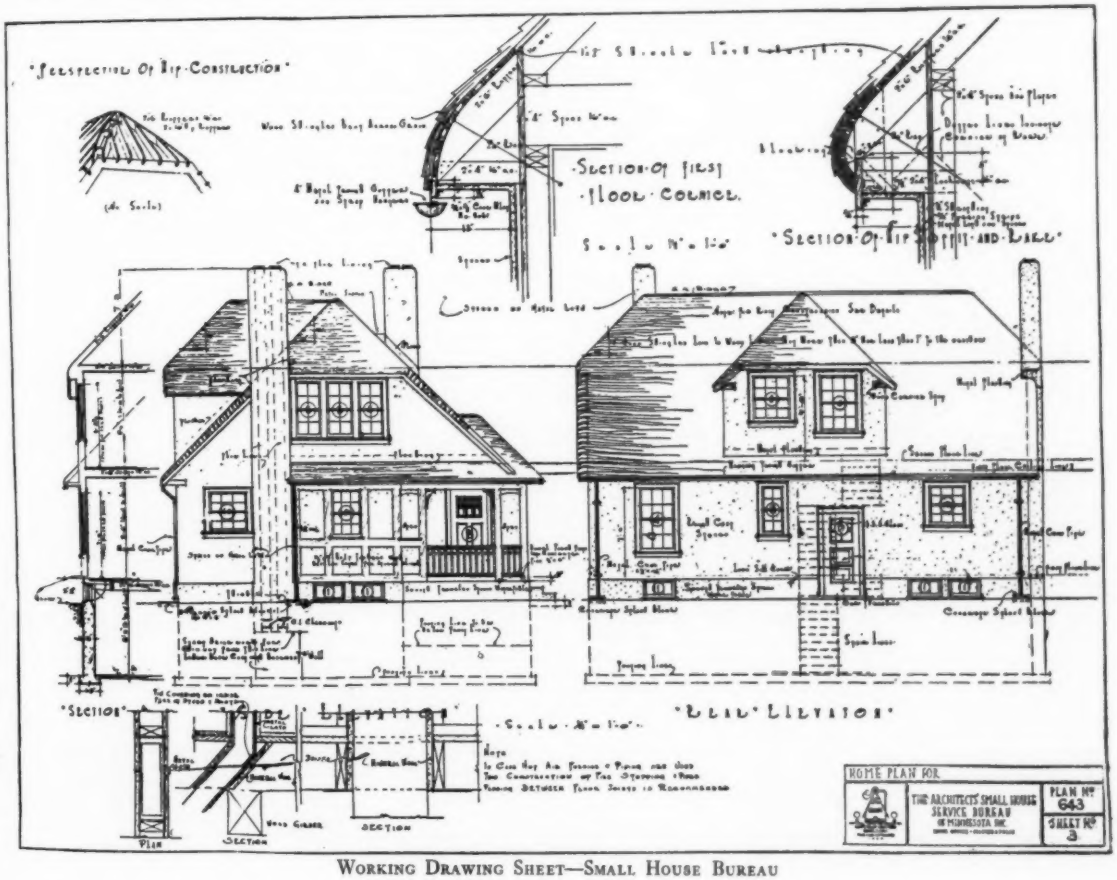


Working Drawing Sheet—Small House Bureau

standard methods of presentation, symbols, and other details, so that the final work, though done in many different offices, should all be along the same lines and of a necessary high standard. One of the members was appointed Technical Director and he watched the work in the different offices, giving weekly reports to the members of the exact state of the contract. A meeting of the Directors was held once a week during the working out of the contract and criticisms and comments were made freely at these meetings so that each member knew just how he stood in his share of the work in relation to the rest. The Working Drawings Committee made a rough check of the work in pencil stage sending it back with notations to the members doing the actual work. After the final inking in of the drawings they were checked and rechecked by the Committee until it was reasonably sure they were as accurately done as possible. Each member of the Committee was responsible for a certain part of the work, one on stairs, one on general dimensions, one on plumbing, one on lighting, and so forth.

And again, in the meantime, came the making of the rendered perspectives for publication in the book. Mr. Jules Crow, of New York, came to Minneapolis for two months and worked on this doing nearly fifty per cent of the one hundred perspectives. The balance were done by Mr. Roy Childs Jones, Mr. Jefferson M. Hamilton, and Mr. Rhodes Robertson. The quality of their work and the devotion shown to it speak for themselves in the results as achieved in the book as published. And again, a special committee was at work on a specification that should fit the work, and on the colossal job of getting out quantity surveys that should be accurate. A capable man was found for this and the work done by him and his assistants had, of course, to be checked by the members. Finally, Mr. Flagg and Mrs. Flagg were at work on the editorial matter. The descriptions of the houses and much of the text containing the personal intimate home touch were done by Mrs. Flagg. Here, again, came the careful checking and almost daily consultations and advice with the Editorial Committee.

To the credit of the Bureau and all its members and helpers be it said that on the day before Christmas Mr. Flagg was authorized to telegraph the Southern Pine Association that the Bureau had completed its part of the contract. Since that time the editors and printers have been busy and at the time this is written the book is ready to go to press and will probably be on the market before this goes into print. With the colossal job ahead of the Bureau its other work was allowed to ride of itself until the contract was finished. In spite of that inquiries kept



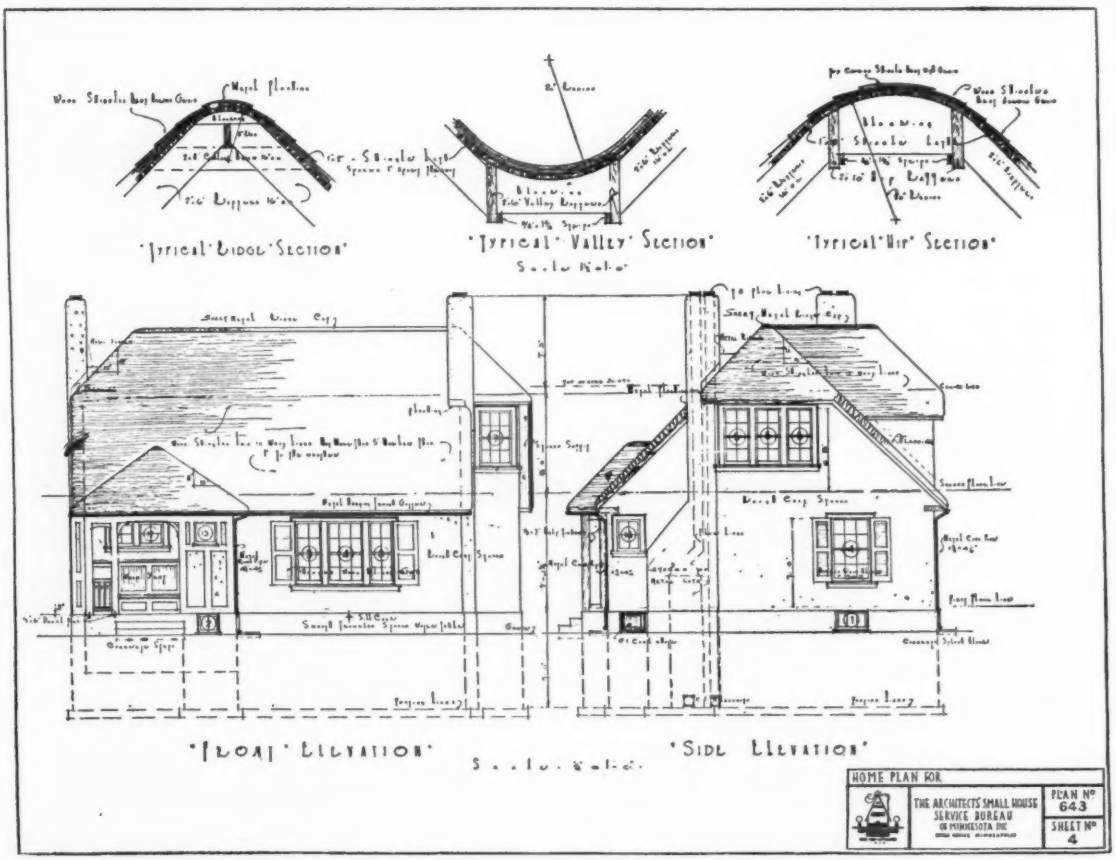
WORKING DRAWING SHEET—SMALL HOUSE BUREAU

coming in and many of the old plans were sold. Building conditions were such that few of these were even started in actual construction but this spring should see them under way. If the building season opens at all the Bureau will be smothered in work.

Its entire effort has been devoted to making possible a complete and comprehensive service. The day an inquiry, or rather order, is received for a plan, the complete set of drawings, specifications and quantity survey will be mailed to the buyer or handed to him in person. Much time and thought has been expended on being sure of this prompt service, to say nothing of the perfection of the set of plans ready to be delivered. The Bureau has realized that it has entered the field of small homes, hitherto almost unknown to the profession in general, and that it must make such a showing as will prove that architecture is a real profession and that an architect can give real service. If the Bureau cannot give such a service as has never been given before by any so-called plan services it will not justify its existence. The writer feels that the service as planned and ready now is more than adequate to fully justify itself.

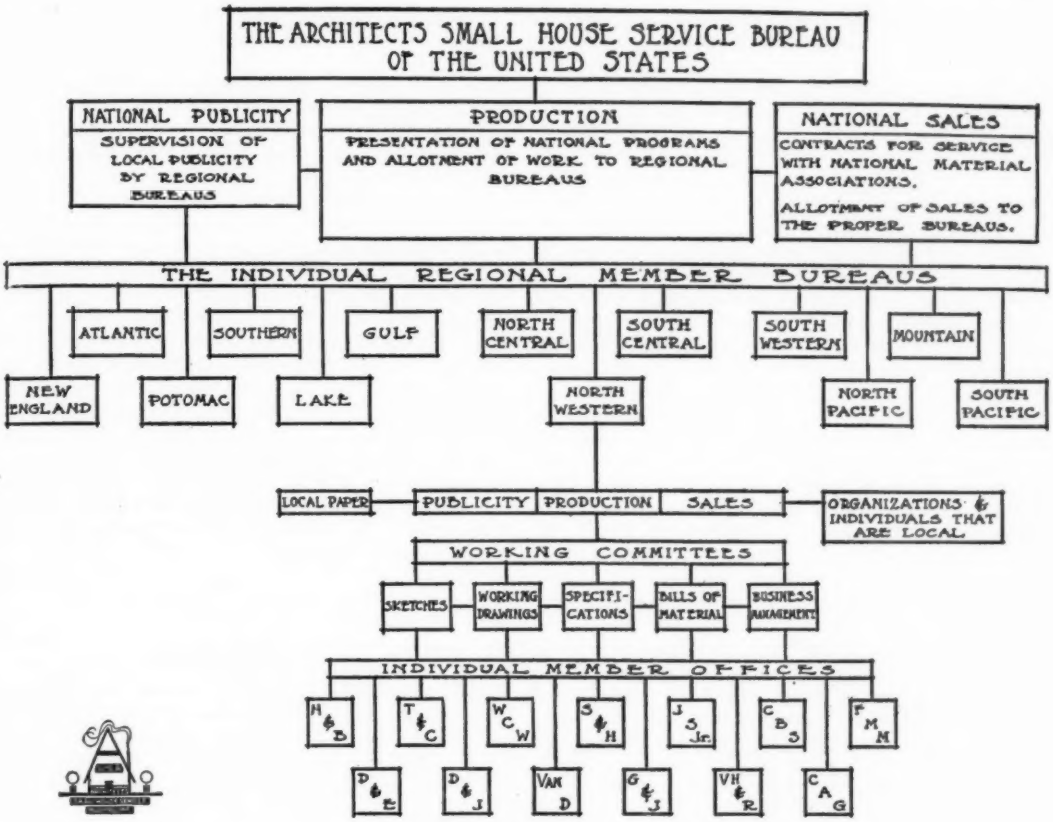
One of the most interesting things about the entire year's experience has been the discovery, and this has been doubted by many in the profession, that a group of architects can all work together in the finest spirit of rivalry for the best that is in them, can cooperate thoroughly, can give and take criticism, can abolish all of the old time professional jealousies, and can do a big job in a thoroughly efficient and business-like way. No individual architect, firm or workman has his mark on any of the work produced. It is all done by the Bureau and all the members stand as a unit in accepting praise or blame for any and all parts of the work done.

While, previous to this time, no publicity has been given to the fact that the Bureau had a contract with the Southern Pine Association for one hundred homes, nevertheless the news has leaked out and a number of inquiries have come in as to whether the Bureau has sold itself to the lumber industry, whether the Southern Pine Association had the control of the Bureau's future work, and a number of similar queries started by I know not what methods of reasoning. Suffice it to say that the Bureau has a contract with the Southern Pine Association similar to the contract of any architect with any owner. The Bureau has undertaken a definite piece of work for the Association which it is carrying out to the best of its ability. As with any piece of architectural work the drawings, specifications and quantity surveys are "Instruments of Service,"



Working Drawing Sheet—Small House Bureau

ARCHITECTS SMALL HOUSE SERVICE BUREAU OF MINNESOTA, INC.



- ADMINISTRATIVE DIVISIONS OF - - THE ARCHITECTS SMALL HOUSE SERVICE BUREAU - - OF THE UNITED STATES -

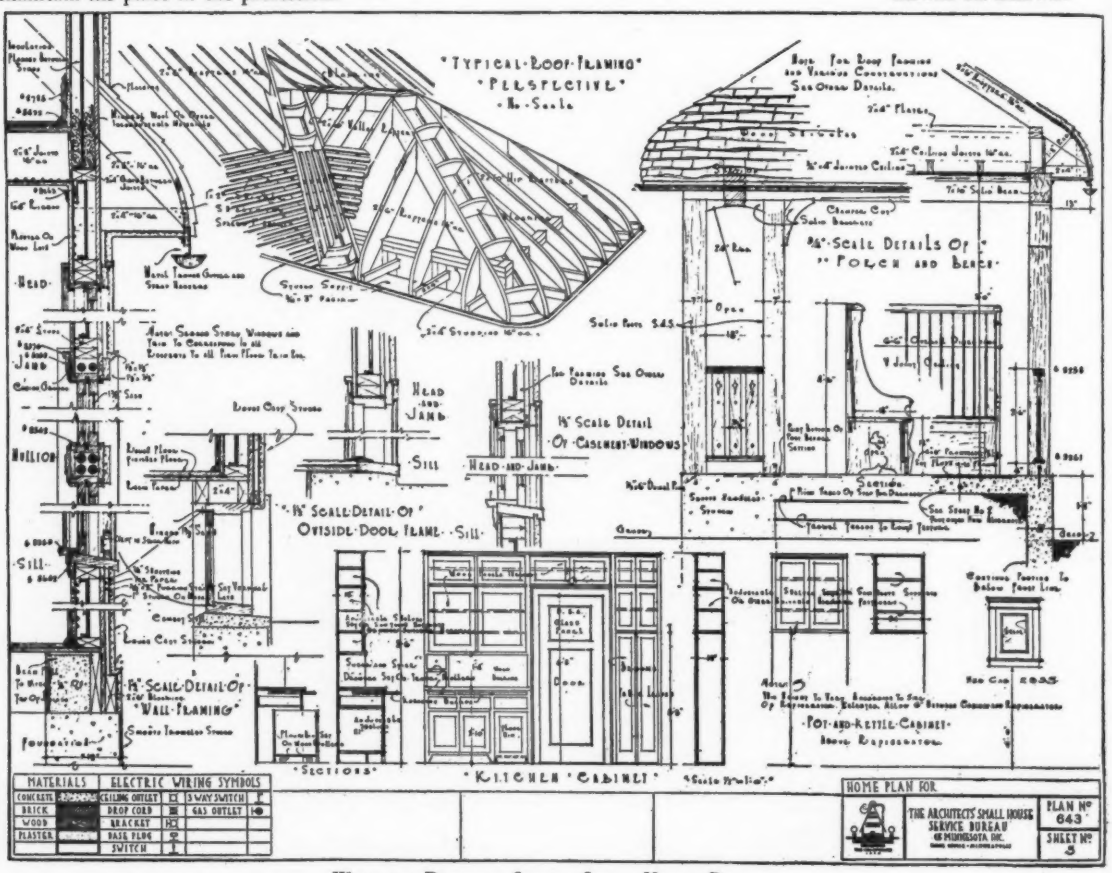
and, as such, are the property of the Bureau. Such an organization as the Bureau, must of necessity, deal with large numbers of plans, and, therefore, cannot enter the field of individual designing. Its object, perforce, is to prepare completed work that will sell to those people that cannot afford the cost of individual planning by an architect. The vast majority of small home work being done with ready-made plans or no plans at all, it is felt, with confidence, that ready-made plans such as are furnished by the Bureau will fill a great lack in this country.

It has been further stated that the work of the Bureau will be in direct competition to that of many architects. Inasmuch as the work is limited to small houses this would affect but very few architects. Those few who are making a living by such small work will find the answer by joining a Bureau, taking over its work, doing the supervision that will be called for, doing the large amount of work that a Bureau must do and which, by the very size of the work developing on the horizon, will enable it to pay properly for such work. Furthermore the class of work turned out by the Bureau will serve to educate the public as to what an architect can and should do, and will be of almost inestimable value in helping the struggling architect in the small remote communities to keep up his standards and maintain his place in the profession.

The Committee has found, throughout the past year, that the need for a great organization, covering the entire country, was immediate. Otherwise there would be duplication of effort in different parts of the country. Following, therefore, the instructions of the Convention, it has laid out the plans for the Architects' Small House Service Bureau of the United States, Incorporated. This central body has been formed and is getting the various regional Bureaus in the different parts of the country under way. If the rest of the profession will follow the lead of Minnesota in this regard, the next year will see many regional Bureaus established and working together to cover the small house work of the entire country. It will see several hundred architects profitably employed in producing plans for small houses, and the springing up, from one end of the country to the other, of a home building nation, building homes that are livable and useful, economical, safe and good looking. And these homes will ultimately be designed by architects who live in the different localities and thoroughly understand the many and various problems of building in their own bailiwicks.

The charts attached show the districting and organization of this national Bureau and the organization of each component part thereof.

EDWIN H. BROWN.



WORKING DRAWING SHEET—SMALL HOUSE BUREAU

The Congress of the Building Industry

Commenting on his recent visit to the Pacific Coast made in the interest of the Congress of the Building Industry, Mr. Robert D. Kohn, Chairman of the Congress says:

"The most surprising point about the meetings held in various Cities with contractors, architects and labor men in the interest of the Congress of the Building Industry was the unanimity with which the idea was welcomed. There were questions as to the practicability of the plan, but there was a very general willingness to join in the effort to bring together the various elements in the building industry in an attempt to cooperate in clarifying the functional relationships of the parts to the whole. In some Cities contractors had actually approached the architects in unsystematic and incompletely thought-out efforts to get together; in others the various professional branches of the building industry had joined to coordinate their efforts; in no place had any effort been made to bring all the elements together.

"Two criticisms of the Congress plan, in the course of this visit to the coast, deserve public attention. The first was that the Institute by encouraging this new move is really creating a new organization when one has already been established to do the same thing. This objection was heard from people who had evidently not distinguished between what the Congress of the Building Industry proposes to do and the programme of the Federation of Construction Industries. In general it was easy enough to point out that the Congress of the Building Industry will lay its primary stress on the function of investigating the status of the various branches of the building industry, looking into requirements as to supplies of building materials, the requirements and supply of labor of various kinds, the training for the crafts, the basis of building credits, the methods of contracting, with a view to finding out our own faults, correcting existing evil and setting the industry right as a whole. The Congress of the Building Industry is not a boosting organization. It practically says that the Building Industry as a whole cannot expect to get on its feet, and become prosperous by merely shouting that people ought to build and build now. The Congress organization says 'there is something the matter with us and there is a great deal the matter with the whole industrial machine of which we are a part. Until we can start our industry in the right direction we cannot expect the public to have confidence in us. We are trying to create an industry conscience, an industry public opinion which will at least make impossible the unfair, disgraceful combinations and restrictions which have marked the functioning of the building industry throughout the whole country.' The Board of Directors of the American Institute of Architects voted last year to authorize this move for a 'Congress' because it knew of no other organization that was minded to do this fundamental job.

"The other criticism voiced by some contractors, and architects in the course of the Pacific coast meetings and elsewhere was to the effect that the job we had set out to do was too difficult. It is true that the realization of the purposes of the Congress movement will not be reached within the life time of any one now interested in it. The great result produced by this kind of a movement as against one that strives merely for an immediate prosperity boosting result is in the nature of a by-product; the new relations created by cooperation. It matters not whether the ends we wish to attain are in a large measure reached in the near future. It does matter very much indeed that in the working toward these ends, in the process, we achieve more good than in the measures of attainment of our efforts. The greatest advantage we hope for is that when all of the various functioning parts of the building industry in any community get together and consider the problems of the industry, unexpected things of value will come out of the relationship. In other words, great good will come out of the means, no matter how much may be attained of the end sought.

"It is an exceedingly hopeful sign to those who are devoting much time to the Congress movement, trying to organize local effort, to find that steps are being taken toward creating local groups not only in Omaha, Philadelphia, Boston and New York, but, since the recent trips of Mr. Kendall, Mr. Kohn and Mr. Russell, also in Minneapolis, Seattle, Portland, San Francisco, Los Angeles, Dallas, Louisville and New Orleans."

The Building Industry

Two Analyses

The following letter has been addressed to the Calder Senate Committee on Reconstruction:

Twenty of the leading Architects of Chicago were invited to meet and give their opinions and suggestions for submission to your honorable body. Thirteen Architects met, and after discussing the matter in two sessions, the following categorical statements respecting the existing hindrances to building and their corresponding remedies were agreed upon by the undersigned. The chief hindrances are:

1. Popular belief in the existence of monopolistic fixing of the price and the output of labor and the fear of jurisdictional and other strikes and lockouts with an attendant system of graft and frightfulness.

2. A popular belief in the existence of artificial regulation of price and output in the production and distribution of building materials with and without the connivance of organized labor, together with inadequate and manipulated transportation facilities.

3. High cost of money for building enterprises with exceedingly high commission charges for building loans.

The suggested remedies are respectively:

1. The prohibition of the use of force or coercion strikes and lockouts for the settlement of jurisdictional or

or wage disputes and the restoration of the right of every citizen to enter as an apprentice or tradesman any field of endeavor he choses without let or hindrance from any organization except the Government itself.

2. The creation of a permanent bureau or department of buildings at Washington leading to the democratization of building associations and the prohibition of artificial fixing of prices and output and the protection of the rights of any individuals to enter production fields without let or hindrance from any association.

3. The enactment of a law making the postal savings and other savings deposits of the people available for individual home building and ownership at rates commensurate with savings deposit interest in conjunction with a national building bureau or department, operating in a manner similar to the farm loan banks system and furnishing low cost plans and desirable information relative to individual or single family home building.

We further beg to state there is now such a volume of projects on file in the Architects' offices in Chicago being held up by the prevailing unsatisfactory building conditions that if released could not possibly be built within the next two years with the available supply of organized labor and building material; and further, we believe that even if money were available on easy terms the cost of building could not be very materially reduced within the next few years and might be increased on account of the limited supply of building materials and labor.

Respectfully submitted, Henry K. Holsman, President, Illinois Chapter, American Institute of Architects; F. E. Davidson, President, Illinois Society of Architects; N. Max Dunning, Ralph C. Harris, Albert M. Saxe, Robert S. Ostergren, J. A. Armstrong, H. B. Wheelock, Irving K. Pond, Alfred S. Alschuler, D. H. Perkins, J. C. Llewellyn C. H. Hammond, G. C. Nimmons, John A. Nyden, Richard E. Schmidt.

Our Philosophy of Restriction

The investigation of the Lockwood Committee has thrown some light upon the question—what is the matter with the building industry? But still the question remains, for the same ready answers are ventured today as prior to the investigation. It is the fault of Labor—strikes, high wages, low output, sabotage. It is the fault of money lenders—they will not advance much money for building—money is tight. It is the material man's fault—he is not producing—his plants are on part time or shut down—there is an "understanding" between material men. It is the contractor's fault—his organization is inefficient. It is the investor's fault, the speculator's fault—neither will invest. It is—but why add to the list of reasons advanced under a partisan view point as to who is to blame?

The investigation revealed clearly the existence of a conscious policy—the restriction of output—operating in every phase of the building industry. But with the mere matter of restriction of output the investigation was not concerned. It was concerned with collusive action—with individuals acting together with a view of controlling output and maintaining or advancing prices. Collusive action was discovered, penalties were imposed upon the offenders. Opinion has it that the way is now clear. Having busted these little combinations we are now in a position to organize the building industry on the basis of "service" and "cooperation." But while we are talking about "service" and "cooperation" we are also talking about how much better it will be, having busted the combinations acting in restraint of trade, to get back to the basis of price competition. Evidently we propose to "cooperate" in organizing the building industry as a "service" to be rendered under the rules of price competition.

Certainly this is confusing. What do we mean by service—by cooperation? What do we understand by price competition? To render service, or to cooperate implies action animated by some other idea than that of getting something for nothing. What we evidently have in mind is that our action shall be directed always toward some useful end. It implies the removal of all barriers and obstructions which retard the production and the distribution of goods. Cooperation or the rendering of service are ideas which are readily grasped when action is conceived in terms of *use* or in a technological sense. In fact technological knowledge consists mainly of efficient ways and means. But the ideas of cooperative effort and service do not lend themselves to interpretation in terms of merchandising or business traffic. For business traffic is a matter of buying and selling with a view to securing as wide a margin of net money returns above cost as possible. This margin of net money returns above cost is obtained by so manoeuvering as to gain a differential advantage which can be expressed in terms of price. Under the rule of business traffic the question of price has come to so completely control the situation that action in the interest of the common welfare may only be taken when it may be shown that such a move will show profit in terms of price.

Living, as we do under the rule of price, this statement is not likely to be accepted. But there is evidence a plenty at hand; almost any edition of a financial journal, or almost any daily newspaper will disclose captions, news items and editorials relating to plans looking toward the control of this or that commodity in the interest of price. Controlling or checking production—withdrawing goods from the market—are such commonplace acts as to warrant no unfavorable comment in the financial columns. It is the technique of business traffic and is blameless, of course, under the competitive system.

One reads for example, "world's supply of cotton hangs on price," and of the burning of the cotton crop and of the plans imposed by lenders of credit looking toward restricting the acreage planted. All this is done with a view of maintaining or advancing prices, although the need for more cotton be great. Under the rules of business traffic, too much milk to sell (at a high price) is a far more serious matter than not enough to drink. So that when spring comes the farmers are warned to curtail production notwithstanding the fact that the children of the tenements do not have enough to drink. Social functions are organized with a view of raising funds to supply milk to the hospitals while the producers are turning it into the streams or feeding it to the pigs. There may be a dearth of goods and houses—prices may be beyond the means of a majority to pay—yet at the first rumor of a fall in prices, factories go on short time or close altogether.

All this is a matter of common notoriety; and we assume that such was always the case. It is really a modern phenomenon. Since the rise of the regime of money and price economy a shortage of goods—even a world shortage—has come to be viewed as evidence of business prosperity and national welfare. What we refer to as "over production" has come to be the central concern of business. The community may be in need; its inability to buy at the going price is taken as evidence of over production, so completely have we fallen under the rule of price.

But what is true of business is equally true of labor under the existing regime of money and price economy. Just as the business man goes into business traffic to make money so the purpose of work is to get wages. "By the test of money and prices, scarcity of product and shortage of labor are blessings without disguise, since the one is good for business and the other good for the workers. So that as this works itself out under the price system the gains of one become the losses of the other."[1] This of course is recognized and as a consequence we find that the trade unionist, in his effort to create a situation advantageous to himself, has become, not as so many would have it a revolutionist or what not, but a man who proceeds to his work under the flag of business principles. He attempts to better his condition by resort to various ways and means of manipulating the price of what he has to dispose of—his labor. What this amounts to in the end is the conscious restriction of output. Giving less service for a stipulated wage, is getting a higher price for one's labor—it is keeping the price up—it is controlling output.

That all who engage in business traffic and all who work for wages are guided by a single philosophy—the philosophy of the restriction of output—is not ordinarily granted. Reference to this is ordinarily a matter of partisan exposition—an attempt to blame it all on the other fellow. Take, for example, two editorials in the Boston *Herald*. These contained a detailed account of the numerous regulations of the trades unions, the net effect of which is to restrict output. The point of the articles, as suggested by the titles, was to show how labor was at the root of the housing problem. Labor was restricting output and the implication was that labor was wholly to blame. These editorials, setting forth the truth as regards the action of the trades unions, were no doubt convincing to the *Herald* readers. But failure to recognize that the trades unions were acting in accordance with the practice of those engaged in business traffic rendered the editorials of very dubious value.

For attention was focused upon an attitude, a type of action within a sector of the industrial front; it carried the implication that the general condition of mal-adjustment in the whole industrial field was due to these particular acts on the part of labor. It was completely ignored that this attitude toward production was nothing but the characteristic attitude—the typical action which controls the entire modern industrial world. *Restriction of output is not only characteristic but necessary, and therefore blameless under a system of production for a profit and of competition in terms of price.*

[1]See "The Philosophy of the Restriction of Output," by Leon Ardzrooni, in *Annals of American Academy of Political and Social Science* for September 1920.

So that we are confronted with a larger problem than that of making a few adjustments in the practices of material men, contractors and workers. For under the regime of money and price economy the philosophy of the restriction of output gathers force while the common welfare falls by degrees into a more pecarious state.

Individually we may choose to cooperate and to render a service; and we may act together in small groups. But under the rule of money and price economy, hardship falls thick and fast upon those who produce so efficiently as to cause prices to fall. So also with labor when it works so efficiently as to work itself out of a job and into the category of surplus labor. Under the conditions imposed by the competitive system one is unwise, indeed, to adopt for his own guidance another philosophy than that of the restriction of output. True, it is a selfish philosophy; it leaves the interest of the common welfare completely on one side—leaves it constantly in a slightly more precarious position as the two opposing forces in the struggle for position perfect their technique and attempt to gain their ends.

It is not merely what to do with the building industry; it is what to do with industry. It is more: It is what to do with the philosophy of the restriction of output under guidance of which we all go to our work.

FREDERICK L. ACKERMAN.

N. Y. State Association

AT THE annual meeting held in Albany on February 28, the chief topic of discussion was the proposed amendments to the Registration Law, which the Association approved. These relate chiefly to an annual renewal of the registration certificate as a means of keeping a more accurate record of the profession. The following officers were elected: President, Leon Stern, Rochester; First Vice President, Robert D. Kohn; Second Vice President, Riley Gordon, N. Y. City; Third Vice President, Edward W. Loth, Troy; Secretary, Walter G. Frank, Utica; Treasurer, H. W. Greene, Watertown. Directors, F. L. Ackerman, William Bannister, New York City; Thomas W. Gleason, Albany; Harry Tiffany, Binghamton; Ornan H. Waltz, Ithaca.

Obituary

[2]Frederick A. Russell.

Elected to the Institute in 1901; to Fellowship in 1915.
Died at Pittsburgh, Pa., February 25, 1921.

[2]Charles Bickel.

Elected to the Institute in 1899.
Died at Pittsburgh, Pa., February 1, 1921.

[2]Clarence E. Richards.

Elected to the Institute in 1899.
Died at Columbus, Ohio, February 25, 1921.

[2]Further notices later.

Tax Exemption and Housing

New York City boldly challenges our present financial system by passing an ordinance exempting dwellings from taxation for a period of ten years. Exemptions are calculated on the basis of 1,000 dollars a room, with a maximum of 5,000 for a family. The principle is not wholly new, yet it has never been tried for the primary purpose of encouraging building. It is computed that in the case of a house costing 5,000 dollars, the taxes avoided in ten years would amount to 1,425 dollars, or about 10 dollars a month during that period. The same would hold true of a twenty family apartment house costing 100,000 dollars, the saving in taxes declining proportionately as the cost of building rises. Those who favor the exemption believe that it will encourage the renewal of small house building and home owning. They base their belief on the fact that the exemption offers the greatest inducement to build on cheap land, and this can only be had in the outlying boroughs. But as the owners of this land are already preparing to raise the price, some of the saving will be lost before building is begun, and it remains to be seen how much of it can be saved in the long run. Likewise, there are ample grounds for wondering whether all of the saving will be made available to tenants who cannot buy land and build.

There is some belief at the present time that house building will be much stimulated. It is claimed by the promoters of the law that building materials are now at bottom prices, that loans can be had with the tax exemption as a basis, and that all is well with housing in New York City. But no man in his senses can believe that the way to get adequate housing is to subvention or subsidize it at the expense of the rest of the citizens. The increased service required from the city, as its area is expanded, its traffic increased, its schools more and more crowded, its public services more heavily drawn upon, must be paid for out of taxation levied on somebody. Exemption means that certain fortunate citizens may live in New York City, free, for ten years, while their neighbors pay the cost of providing them with the conveniences and amenities of city life—or else it means that owners and landlords, taking advantage of the situation, may cheat both tenants and the the city.

The present situation will make it difficult to determine just what degree of success or failure may be attributable to tax exemption. There is a shortage of money for building loans, or, to put it perhaps more truthfully, there is a persistent unwillingness on the part of lenders to believe that the cost of building will abate. Thus the proportion of money offered in loans is much less than usual, for the amount is based on prewar costs. Likewise it is equally true that the rent restrictions are acting as a deterrent. It is true that the present law is not applicable to new buildings, but there is a fear that it may be made to apply to them, or that there may be some other form of interference, and thus there are many who say that they are permanently through with speculative building.

It should be remarked in passing that the decision of the Courts upholding the rent laws was accompanied by one of the most remarkable statements ever handed down from the bench. In effect, it declared that the rights of private property must stand aside in the face of a public emergency so serious as the housing crisis. The owners group announce that the legal battle will be carried to the United States Supreme Court, and it may well be that the delay in obtaining a final decision on a question which manifestly affects our whole structure of business will act as a deterrent to house building.

It seems not too much to hope, however, that the experiment in New York may have an educational value far outweighing any immediate gains or losses. True, we do not learn easily, but the decision of the court to which allusion has been made is one that will not rest easy in any grave that may be dug for it. C. H. W.

Before the Coffee and Cigars

A rather oppressive lull in the talk was broken by the hostess who inquired if anyone had read the story of the building of the Taj Mahal, in the March *Atlantic*. She thought it very lovely, and such a tribute to architecture! It was the doctor's wife who echoed her sentiments: "It is a beautiful story, beautifully told. You just thrill with the tale of that imperishable translation of a great love into a piece of architecture at which the whole world marvels. But what a curious way the *Atlantic* has? It lifts you up to a pinnacle of ecstasy with such an article as that, and then, again dealing with architecture, it dashes you down into the hopeless chasm of modern machine building. A man named Brigham has an article on housing in the same number, and it is about the dreariest thing you ever did read. It is as coldly calculating as a board of directors. It talks about houses just as Piranesi pictured prisons. You get the impression that this man Brigham has been running a soup kitchen, or dispensing cast-off clothing, and that now he has turned his attention to houses. You never could possibly surmise that architecture had the least possible relation to a house—or, to what is really important in the question—a home. You simply feel after reading such an article, that the *Atlantic* is easily duped when it strays from its field."

"Agreed," responded the architect. "It's even worse than that, for the article is full of economic falsities, legalistic platitudes, and apparently ignores the fact that in the last fifty years many nations have exhausted all of his senile ideas. But is it possible that anyone reads the *Atlantic* for information?"

There were no defenders, but the lawyer looked a little peeved over the word legalistic. "It's all very well," said he, "to wish to relate architecture to the building of houses, but every lady cannot have a Taj Mahal for her nest of love. I get a little bit fed up with this fine art stuff, you know. It's all right in its place. I don't say it isn't. But just the same it can be overdone in talking about houses."

"Check, and amen, if you will," said the "doctor, but in the last forty years of my practice I have seen American housing conditions go from bad to worse. How are they to be changed by applying more of the same system that has brought them where they are? That is what bothers me." B.

News Notes

THE LIST of awards to students in American schools of architecture, whose work was exhibited at the Pan-American Congress in Montevideo, last year, has been received and is as follows:

GOLD MEDAL.—C. Harold Van Buskirk, Univ. of Pa.; E. Stonffer, Univ. of Ill.; Walter Wilson, Columbia; Arnold B. Berg, Univ. of Mich.; R. M. Kennedy, Cornell.

SILVER MEDAL.—Ben Shafiro, H. Roulem, Univ. of Ill.; L. C. Licht and W. H. Livingston, Univ. of Pa.; Lessing Williams, Joseph Levy, R. S. Twitchell, Columbia; C. W. Attwood, W. L. Rindge, Univ. of Mich.; R. Bailey, C. M. Castillo, R. W. Cheeseman, H. S. Churchill, E. J. Trutham, Cornell.

FIRST MENTIONS.—Frederick A. Chapman, H. P. Barney, P. Chu, and Harry Sternfeld, Univ. of Pa.

DIPLOMAS OF MERIT.—C. E. Levy, and Y. C. Lu, Cornell; H. J. Burke, Peter Binger, Helen M. Gail, Allen Terrell, and C. H. Trofast-Gillette, Columbia; H. L. Parr, L. L. Huntington, and D. A. Sondal, Univ. of Ill.; Fred A. Brinkman, Paul O. Davis, Ralph S. Gerganoff, Herbert D. Schmitz, and Gilbert S. Underwood, Univ. of Mich.

THE JOURNAL benefits from and is encouraged by appreciations and criticisms. One of these, received from the representative of one of the largest purveyors of building materials in the United States, is particularly gratifying, not only to us but to the officers and members of the Institute. Therefore we print it:

"I wish to tell you how much I appreciate the monthly visits of THE JOURNAL. I find much in each issue to help me in my work which is largely educational. I am heartily in sympathy with the work of the Institute, and especially with its recent efforts to create and establish a better understanding and closer bond of sympathy between employer and employed. My work is largely with architects, many of whom are not members of the Institute, and I take occasion when the opportunity presents itself, to speak a good word for your society."

LEST WE become too elated, however, the *Charette* published by the Pittsburgh Architectural Club, says: "This month we think of the contents of THE JOURNAL for February about the same as we did of the cover page last month. (That was very, very ill, as we remember quite well. Ed.) The advertisements are increasing, so perhaps better material will accrue from business prosperity. As it is the magazine deals only with current events, facts, figures and structural service. The beautiful in architecture is hibernating this month. The frontispiece, a photo of a bit of Columbia University, is the worst we ever saw."

SPEAKING at the Convention of the Association of General Contractors, Mr. John Lawrence Mauran, Past President of the Institute, predicted the approach of a new era, in which there would be "friendly conference between the expert builder and the expert architect for the benefit of the owner and the public—architect and builder to be on an equal footing and to render for a fee a truly professional service."

COURAGEOUSLY refusing to lend support to the suppression of public opinion contrary to the taste of the general palate, Mr. Louis S. De Lone, President of the Builder's Guide of Philadelphia, published the valuation of the conference of the Philadelphia Chamber of Commerce on the Building Industry, as prepared by John Irwin Bright, in which he plainly pointed out the futility of trying to examine the building industry through a telescope directed at the workman and his wages. We are informed that no other Philadelphia journal would lend any space to Mr. Bright's exposition of the fundamental economic facts that underlie the present situation, especially in relation to housing.

ANNOUNCEMENT has been made by the Secretary that Mr. Julian Clarence Levi, Secretary of the Committee on Foreign Co-operation, is proceeding to Paris and will there supervise the hanging of the exhibition of American architecture which will form a part of this year's Salon. Mr. Levi will carry a cordial message from the Institute to our confreres in France.

AFFILIATION with engineering societies was considered very carefully at the March meeting of the Baltimore Chapter, which finally voted not to join with the new Engineer's Club, but rather to appoint a special committee which should canvass methods of co-operation such as would leave the Chapter free of entanglements where questions of public interest were at stake. A good-sized minority, however, felt that the proposed affiliation would thoroughly dissipate any charges of aloofness.

REPORTING adversely, the Committee on Competitions of the Baltimore Chapter was sustained by the Chapter, which thereby records itself against any change in the present Competition Code.

IN THIS issue of THE JOURNAL there are reproduced more stage settings designed by members of the Institute. These were held out of the last issue in order to make room for the drawings shown in the Le Brun Scholarship Award, since that event was thought to possess an interest which warranted the immediate use of our pages. On the other hand, we rather regretted having to break the whole presentation of settings, and we hope that our unselfishness, together with the merit of the illustrations, will be a satisfactory amend.

REGISTRATION legislation is being considered by the Iowa Chapter which has appointed a Committee of three, Messrs. Wetherell, Boyd, and Vorse, to confer further with engineers.

SALFORD, England, has accepted the tender of the Building Guild of Manchester for constructing 184 houses at the price of 184,560 Pounds. This is one of the largest contracts ever awarded to the Guilds.

MEMBERSHIP in the Institute does lag for want of initiative, if we may so reason from the activity of the membership committee of the New York Chapter. Mr. John Van Pelt, its Chairman, reported at the March meeting of the Chapter that ninety-seven new members seemed likely to result from the applications filed in the territory of the New York Chapter, although it was hoped to complete the century before the Convention. From all accounts it seems quite possible that the Secretary's report in May will reveal a growth in Institute membership not far from 500, during the last year.

ANNOUNCEMENT is made by Dr. Addison, Minister of Health, that 20 housing contracts are now being carried out under the Guild system. It is also reported that great progress has been made at Walthamstow where the London Guild is to build 400 houses. The first brick was laid early in December and 56 houses are now in various stages of completion. Mr. Tufton, the works manager, elected by the workers, says that many men prefer the Guild idea of six days pay, rain or shine, to the old system of a higher rate of pay but with no provision for lost time.

WESTMINSTER ABBEY was the subject of a lecture recently given by Professor W. R. Lethaby at Manchester University, who said, "Nowadays, we call the Abbey "Gothic," but its builders did not call it anything at all. They just built in the customary way—"in the way that a cook makes an apple pudding." The builders went on seeing how it would come out. At the same time the mason's art was developing, and this in time, by its own redundancy, choked the craft of building. It became a sort of disease, and had brought the decay of what we called Gothic architecture.

"In the old days," he said, "there was no difference between architecture and building, none between the architect and the builder, and very little between master and man. A piece of Gothic architecture was by them just called 'work.'" The mysterious ornaments they had used could still be seen today in the art of a wagon builder, or on gypsy caravans—it was customary with the masons of Westminster, as with some moderns, to do "something for fun," and the frills that worried us now were that something.

And so he asked builders of today to think of cathedrals in a different light—not as Gothic architecture but as a piece of building, as a development of workmanship which had grown out of the mason's art. We, today, must find some way of beginning the art again from within, for we had the responsibility of planning for the next 500 or 1,000 years ahead. We wanted a thousand times more ambition put into the art of building—it was not a question of this man's villa or that man's cottage, but of making Manchester sweet from end to end.

CITY PLANNING students in the United States will be interested to know that in the competition for the replanning of the city of Lille, France, the first prize was won by Monsieur Jacques Greber, associated with Cordonnier fils. Monsieur Greber will be remembered as the French architect who is so largely responsible for the exhibit of American architecture which will be a part of the Paris Salon of 1921.

ADVICE to prospective builders as to how and why an architect should be chosen is excellently set forth in a small circular issued by the Idaho Society of Architects and based on that published for some time by the Iowa Chapter of the Institute. It has the great merit of not seeking to deceive anyone into the belief that any architect is worth his fee. Rather does it emphasize the fact that when a competent man has been chosen, the fee is quite likely to be fair and a good investment.

BULLETINS about Housing multiply with astonishing rapidity. The best one that has ever come to the attention of THE JOURNAL is that issued by the Extension Division of Indiana University. It was prepared apparently for the High School Discussion League, by Adela K. Bittner. Within thirty-two pages she has compressed more information than can be found in thirty-two ordinary bulletins.

SCHOOLS naturally come in for discussion in the subject of education, and the Executive Committee of the National Committee for Chamber of Commerce cooperation with Public Schools,of which Mr.George D. Strayer of Teacher's College of Columbia University is Chairman, has tabulated data of astonishing and even horrible interest. "Only 5 per cent of the school buildings are of what is called fire-proof construction. At least 25 per cent of the two poorest types are of more than two stories and without fire escapes. Thirty per cent of these two types have no fire extinguishers, and less than 10 per cent have automatic sprinklers, with only 11 per cent having automatic fire alarms." The New York *World*, commenting on the report, announces that pupils are herded in fire traps and that tens of thousands of pupils in 429 cities are on half time because of lack of building. On the subject of playgrounds the report states that only one half of the 3,600,000 children covered in the study have playground space of 6 by 6 feet per pupil, while the rest have no space at all. It is not a very good commentary on our boasted progress.

LEGISLATIVE work has largely occupied the attention of the Connecticut Chapter, which at present finds itself confronted with two conflicting statutes, one providing that an appropriation shall have been made before any competition takes place, while the other insists that before the State shall appropriate money, plans, specifications, and bids shall have been received. The Chapter has prepared what appears to be an excellent bill, providing for a suitable type of competition and also making possible, under certain conditions, for the direct appointment of an architect by the Board in charge of the project.

ALEXANDER B. Trowbridge and Frederick Lee Ackerman announce that the partnership of Trowbridge and Ackerman, Architects, has been dissolved. Mr. Ackerman will complete the unfinished work of the firm, and will continue the general practice of architecture at 25 West 44th St., N. Y. under the name of Frederick Lee Ackerman, Architect. Mr. Trowbridge will continue his services as consulting architect to the Federal Reserve Board, Washington, D. C., and to the Federal Reserve Bank of New York, with offices at 120 Broadway, New York. At the expiration of this engagement, he will open new offices for a specialized practice as consulting architect.

THE EIGHTH annual meeting of the Association of Collegiate Schools of Architecture will be held at Washington, May 9, 10, 11.

THE JOURNAL *desires to make its columns valuable as a medium for an exchange of thought on all matters relating to the profession of architecture. All such expressions, whether in editorials, or otherwise, must obviously be accepted as expressions of individual opinion. Contributions are invited, all articles to be signed by the name or initials of the writer in acknowledgement of their source and the writer's responsibility.*

Structural Service Department

SULLIVAN W. JONES, *Associate Editor*
LEROY E. KERN, *Assistant*

In connection with the work of the Committee on Structural Service of the American Institute of Architects and in collaboration with other professional societies and organized bodies having the same objective—improvement in building materials and methods and better shelter for humanity in all its manifold vocations and avocations.

Committee Activities

A New Departure in Standard Specifications. (9)—The specification writer labors under the handicap of a limited knowledge of the technique surrounding the production, and to a lesser degree the technique of utilization of many of the products which go into the construction of buildings in connection with which he functions. He knows a little about a great many of the things he has to use in translating design into concrete actuality. This limitation of technical knowledge has produced profits for the manufacturer and purveyor of cheap and shoddy materials, since it cleared the field for the competitive sale of products that were not competitive judged from the standpoint of service value.

Because ignorance on the part of the consumer results in profits to the producer, the short-view policy of many manufacturers has been to withhold from the architect and his specification writer that information about the product which is essential to wise selection in the interest of ultimate economy.

This policy, it is now being discovered, is reacting to the disadvantage of whole industries. Failures of individual products are, by reason of this same limited knowledge, viewed as characteristic of whole classes of products. To be more specific, the failures of low grade and defective architectural terra cotta have riveted in the minds of many the assumption that all terra cotta is a cheap and shoddy material to be used as an economy effecting substitute, and only when necessity demands.

We architects have known really very little about the technique of manufacture and of setting terra cotta. The terra cotta industry, as now completely represented in the National Terra Cotta Society, has decided to take the architect into its confidence, give him the information he must have in order to discriminate between good and poor material and between good and poor setting. In its legitimate field of usefulness as a material for the translation of certain periods or styles in architectural design, and not as a cheap substitute, good architectural terra cotta has an undeniable claim to recognition.

Some months ago, the Committee on Structural Service was requested by the National Terra Cotta Society to cooperate in the preparation of a standard specification for architectural terra cotta. After an extended discussion of the problem and the factors involved, in the course of which the Society's Executive Secretary and the members of its Specifications Committee disclosed with the utmost frankness the difficulties confronting their industry as a whole, which they claimed arose from the lack of standards, the lack of an industry policy and the lack of knowledge on the part of those to whom or through whom the industry sold its product, the Committee on Structural Service, through its Chairman, suggested to the Society that a document be prepared which should consist of four parts; 1. A full and complete standard specification for the manufacture and setting of architectural terra cotta; 2. A short form specification based upon the standard which architects might embody in their general specifications; 3. A glossary of terms or standard nomenclature; 4, and most important, a discussion on the technique of manufacture and setting. This discussion, it was proposed, should develop thoroughly and completely the whole process of manufacture, the causes of defects, a description of the characteristics of good terra cotta and how they are secured. With respect to setting, the discussion should develop good practice and point to bad practice which results in failures. The importance of supervision should be emphasized. The reason for this emphasis lies in the fact that the material is usually set, not by the manufacturer but by a contractor who is generally moved by a desire to make the setting cost him as little as possible.

The suggestion was enthusiastically accepted by the Society at its convention in New York on Feb. 7 and 8 last, and the first draft of this four part document is now in type. It will become the basis of the joint work of the two Committees.

Since before the war the National Terra Cotta Society has maintained two fellowships at the U. S. Bureau of Standards. A vast amount of research work has been accomplished. The assistance of the men holding these fellowships and the exact knowledge of the material which they can contribute to the coming discussions will be of the greatest value. The Committee feels that the architectural profession may look forward to the production of a new and most useful document traveling under the title of "standard specification."

Abstracts

It is the purpose of the Structural Service Committee and THE JOURNAL *jointly to give in this division each month, brief abstracts of all publications by the Government Departments and Bureaus, University and other research laboratories, States and Associations, which contain fresh information in regard to materials or methods employed in construction and thus afford architects and others a convenient means of keeping themselves conversant with rapidly expanding knowledge in the technique of construction.*

Portland Cement Stucco. (21e1)—The following is an authorized reprint of the Standard Recommended Practice for Portland Cement Stucco, from the copyrighted Proceedings, Vol. XVI, 1920, of the American Concrete Institute. The Portland Cement Association has reprinted this specification, in a booklet entitled "Recommended Practice for Portland Cement Stucco."

General Requirements. 1. *Design.*—Whenever the design of the structure permits, an overhanging roof or similar projection is recommended to afford protection to the stucco. Stuccoed copings, cornices and other exposed horizontal surfaces should be avoided whenever possible. All exposed stuccoed surfaces should shed water quickly, and whenever departure from the vertical is necessary, as at water tables, belt courses, and the like, the greatest possible slope should be detailed. Stucco should not be run to the ground whenever other treatment is possible. Should the design of the structure require this treatment, the backing should be of tile, brick, stone, or concrete, providing good mechanical bond for the stucco, and should be thoroughly cleaned before plastering. Unless special care is taken to thoroughly clean the base and each plaster coat from dirt and splash before the succeeding coat is applied, failure of the stucco may be expected.

2. *Flashing.*—Suitable flashing should be provided over all door and window openings wherever projecting wood trim occurs. Wall copings, cornices, rails, chimney caps, etc., should be built of concrete, stone, terra cotta, or metal with ample overhanging drip groove or lip, and water-tight joints. If copings are set in blocks with mortar joints, continuous flashing should extend across the wall below the coping and project beyond and form an inconspicuous lip over the upper edge of the stucco. Continuous flashing with similar projecting lip should be provided under brick sills. This flashing should be so installed as to insure absolute protection against interior leakage. Cornices set with mortar joint should be provided with flashing over the top. Sills should project well from the face of the stucco and be provided with drip grooves or flashing as described above for brick sills. Sills should also be provided with stools or jamb seats to insure wash of water over the face and not over the ends. Special attention should be given to the design of gutters and down spouts at returns of porch roofs where overflow will result in discoloration and cracking. A 2-inch strip should be provided at the intersection of walls and sloping roofs and flashing extended up and over it, the stucco being brought down to the top of the strip.

3. *Preparation of Original Surface.*—All roof gutters should be fixed, and downspout hangers and all other fixed supports should be put in place before the plastering is done, in order to avoid breaks in the stucco.

Metal lath and *wood lath* should be stopped not less than 6 inches above grade to be free from ground moisture.

All *trim* should be placed in such manner that it will show its proper projection in relation to the finished stucco surface, particularly in overcoating.

Masonry Walls. 4. *Tile.*—Tile for exterior walls should perferably be not less than 8 inches thick, and should be hard-burned, with dovetail or heavy ragged scoring. Tile should be set in cement mortar composed of one part cement, not more than one-fifth part hydrated lime and three parts sand, by volume. The blocks should not vary more than $\frac{1}{2}$ inch in total thickness and should be set with exterior faces in line. Joints should not be raked, but mortar should be cut back to surface. Neither wire mesh nor waterproofing of any type should be applied to tile walls before plastering. The surface of the tile should be brushed free from all dirt, dust and loose particles, and should be wetted to such a degree that water will not be rapidly absorbed from the plaster, but not to such a degree that water will remain standing on the surface when the plaster is applied.

5. *Brick.*—Surface brick should be rough, hard-burned, commonly known as arch brick. Brick should be set in cement mortar with joints not less than $\frac{3}{8}$ inch thick, and the mortar should be raked out for at least $\frac{1}{2}$ inch from the face. The surface of the brick should be brushed free from all dust, dirt and loose particles, and should be wetted to such a degree that water will not be rapidly absorbed from the plaster, but not to such a degree that water will remain standing on the surface when the plaster is applied.

Old brick walls which are to be overcoated should have all loose, friable, or soft mortar removed from joints, and all dirt and foreign matter should be removed by hacking, wire brushing or other effective means. Surfaces that have been painted or waterproofed should be lathed with metal lath before overcoating.

6. *Concrete.*—Monolithic concrete walls should preferably be rough and of coarse texture, rather than smooth and dense, for the application of stucco. Walls of this type should be cleaned and roughened, if necessary, by hacking, wire brushing, or other effective means. The surface of the concrete should be brushed free from all dust, dirt, and loose particles, and should be wetted to such a degree that water will not be rapidly absorbed from the plaster, but not to such a degree that water will remain standing on the surface when the plaster is applied.

7. *Concrete Block.*—Concrete block for stucco walls should be rough and of coarse texture, but not weak or friable. Block should be set with cement mortar joints, which should be raked out or cut back even with surface. Before applying the stucco the surface should be brushed free from all dust, dirt, and loose particles, and should be wetted to such a degree that water will not be rapidly absorbed from the plaster, but not to such a degree that water will remain standing on the surface when the plaster is applied.

Frame Walls. 8. *Framing.*—Studs spaced not to exceed 16 inch centers should be run from foundation to rafters without any intervening horizontal members. The studs should be tied together just below the floor joists with 1 x 6 inch boards which should be let into the studs on their inner side, so as to be flush and securely nailed to them. These boards will also act as sills for the floor joists, which, in addition, should be securely spiked to the side of the studs.

9. *Bracing.*—The corners of each wall should be braced diagonally with 1 x 6 inch boards let into the studs on their inner side, and securely nailed to them.

In back-plastered construction in which sheathing is omitted, at least once midway in each story height, the studs should be braced horizontally with 2 x 3 inch bridging set one inch back of the face of the studs. This assumes that the studs are 2 x 4 inches. Larger sizes would require correspondingly larger bridging.

In sheathed construction no bridging is necessary.

10. *Sheathing.*—In back-plastered construction the lath should be fastened direct to the studding and back-plastered, and no sheathing is used.

In sheathed construction the sheathing boards should be not less than 6 inches nor more than 8 inches wide, dressed on one or both sides to a uniform thickness of 13/16 inch. They should be laid horizontally across the wall studs and fastened with not less than two 8d nails at each stud.

11. *Inside Waterproofing.*—In back-plastered construction no waterproofing is necessary.

In sheathed construction, over the sheathing boards should be laid horizontal layers, beginning at the bottom, a substantial paper, well impregnated with tar or asphalt. The bottom strip should lap over the baseboard at the bottom of the wall, and each strip should lap the one below at least 2 inches. The paper should lap the flashings at all openings.

12. *Furring.*—Metal Lath. When furring forms an integral part of the metal lath to be used, then separate furring as described in this paragraph is omitted.

In *back-plastered construction* galvanized or painted 3/8 inch crimped furring, not lighter than 22-gage or other shape giving equal results, should be fastened direct to the studding, using 1¼ inch x 14-gage staples spaced 12 inches apart.

In *sheathed construction* galvanized or painted 3/8 inch crimped furring not lighter than 22-gage, or other shape giving equal results, should be fastened over the sheathing paper and directly along the line of the studs, using 1¼ inch x 14-gage staples spaced 12 inches apart. The same depth of furring should be adhered to around curved surfaces, and furring should be placed not less than 1½ inches not more than 4 inches on each side of and above and below all openings.

Wood Lath.—Furring 1 x 2 inches should be laid vertically 12 inches on centers over the sheathing paper and nailed every 8 inches with 6d nails.

13. *Lath.*—Metal lath should be galvanized or painted expanded lath weighing not less than 3.4 lbs. per square yard.

Wire lath should be galvanized or painted woven wire lath, not lighter than 19-gage, 2½ meshes to the inch, with stiffeners at 8 inch centers.

Wood lath should be standard quality, narrow plaster lath 4 feet long and not less than 3/8 inch thick.

14. *Application of Lath.*—Metal Lath. Lath should be placed horizontally, driving galvanized staples 1¼ inch by 14-gage not more than 8 inches apart over the furring or stiffeners. Vertical laps should occur at supports and should be fastened with staples not more than 4 inches apart. Horizontal joints should be locked or butted and tightly laced with 18-gage galvanized wire.

Wood Lath.—Lath should be placed horizontally on the furring with ½ inch openings between them. Joints should be broken every twelfth lath. Each lath should be nailed at each furring with 4d nails.

15. *Corners.*—Metal Lath. The sheets of metal lath should be folded around the corners a distance of at least 3 inches and stapled down, as applied. The use of corner bead is not recommended.

Wood Lath.—At all corners a 6 inch strip of galvanized or painted metal lath should be firmly stapled over the lath with 1¼ inch x 14-gage galvanized staples.

16. *Spraying.*—Before applying the first coat of plaster, wood lath should be thoroughly wetted, but water should not remain standing on the surface of the lath when the plaster is applied.

17. *Insulation.*—The air space in back-plastered walls may be divided by applying building paper, quilting, felt, or other suitable insulating material between the studs, and fastening it to the studs and bridging by nailing wood strips over folded edges of the material. This insulation should be so fastened as to leave about 1 inch air space between it and the stucco. Care should be taken to keep the insulating material clear of the stucco, and to make tight joints against the wood framing at the top and bottom of the space and against the bridging.

18. *Overcoating.*—Old frame walls which are to be overcoated should be made structurally sound in every respect, and, as far as possible, the general conditions on pages 1 and 2 should be observed; otherwise the recommended practice for frame structures obtains.

19. *Cement.*—The cement should meet the requirements of the standard specifications for Portland cement of the American Society for Testing Materials, and adopted by this Institute. (Standard No. 1.)

20 *Fine Aggregate.*—Fine aggregate should consist of sand, or screenings from crushed stone or crushed pebbles, graded from fine to coarse, passing when dry a No. 8 screen. Fine aggregate should preferably be of silicious materials, clean, coarse, and free from loam, vegetable, or other deleterious matter.

21. *Hydrated Lime.*—Hydrated lime should meet the requirements of the standard specifications for hydrated lime of the American Society for Testing Materials.

22. *Hair or Fiber.*—There should be used only first quality long hair, free from foreign matter, or a long fiber well combed out.

23. *Coloring Matter.*—Only mineral colors should be used which are not affected by lime, Portland cement, or other ingredients of the mortar, or the weather.

24. *Water.*—Water should be clean, free from oil, acid, strong alkali or vegetable matter.

Preparation of Mortar. 25. *Mixing.*—The ingredients of the mortar should be mixed until thoroughly distributed and the mass is uniform in color and homogeneous. The quantity of water necessary for the desired consistency should be determined by trial, and thereafter measured in proper proportion.

Machine Mixing.—The mortar should preferably be mixed in a suitable mortar-mixing machine of the rotating drum type. The period of machine mixing should be not less than 5 minutes after all the ingredients are introduced into the mixer.

Hand Mixing.—The mixing should be done in a watertight mortar box, and the ingredients should be mixed dry until the mass is uniform in color and homogeneous. The proper amount of water should then be added and the mixing continued until the consistency is uniform.

26. *Measuring Proportions.*—Methods of measurement of the proportions of water should be used which will secure separate uniform measurements at all times. All proportions stated should be by volume. A bag of cement (94 lbs. net) may be assumed to contain 1 cubic foot; 40 lbs. may be assumed as the weight of 1 cubic foot of hydrated lime. Hydrated lime should be measured dry, and should not be measured nor added to the mortar in the form of putty.

27. *Retempering.*—Mortar which has begun to stiffen or take on its initial set should not be used.

28. *Consistency.*—Only sufficient water should be used to produce a good workable consistency. The less water the better the quality of the mortar, within working limits.

29. *Mortar.*—All coats should contain not less than 3 cubic feet of fine aggregate to 1 sack of Portland cement. If hydrated lime is used it should not be in excess of one-fifth of the volume of cement. Hair or fiber should be used in the scratch coat only on wood lath, on metal or wire lath that is to be back-plastered, or on metal or wire lath which is applied over sheathing and is separated therefrom by furring deeper than $\frac{3}{8}$ inch.

30. *Application.*—The plastering should be carried on continually in one general direction without allowing the plaster to dry at the edge. If it is impossible to work the full width of the wall at one time, the joining should be at some natural division of the surface, such as a window or door.

The *first coat* should thoroughly cover the base on which it is applied and be well troweled to insure the best obtainable bond. Before the coat has set it should be heavily cross-scratched with a saw-toothed metal paddle or other suitable device to provide a strong mechanical key.

The *second coat* should be applied whenever possible on the day following the application of the scratch coat. The first coat should be dampened if necessary, but not saturated, before the second coat is applied. The second should be brought to a true and even surface by screeding at intervals not exceeding 5 feet, and by constant use of straightening rod. When the second coat has stiffened sufficiently, it should be dry floated with a wood float and lightly and evenly cross-scratched to form a good mechanical bond for the finish coat. The day following the application of the second coat, and for not less than three days thereafter, the coat should be sprayed or wetted at frequent intervals and kept from drying out.

In back-plastered construction the backing coat should preferably be applied directly following the completion of the brown coat. The keys of the scratch coat should first be thoroughly dampened, and the backing coat then well troweled on to insure filling the spaces between the keys and thoroughly covering the back of the lath. The backing coat should provide a total thickness of plaster back of the lath of $\frac{5}{8}$ inch or $\frac{3}{4}$ inch, and should finish about $\frac{1}{4}$ inch back of the face of the studs.

The finish coat should be applied not less than a week after the application of the second coat. Methods of application will hereinafter be described under "finish."

31. *Two-Coat Work.*—Whenever two-coat work is required, the first coat should preferably be "doubled" that is, as soon as the first coat is stiff enough it should be followed by a second application of mortar and this should then be treated as described for the second coat under paragraph 30. The finish should be applied not less than a week after the application of the first coat

32. *Drying Out.*—The finish coat should not be permitted to dry out rapidly, and adequate precaution should be taken, either by sprinkling frequently after the mortar is set hard enough to permit it, or by hanging wet burlap or similar material over the surface.

33. *Freezing.*—Stucco should not be applied when the temperature is below 32 degrees F., nor under any conditions such that ice or frost may form on the surface of the wall.

Finish. 34. *Stippled.*—The finishing coat should be troweled smooth with a metal trowel with as little rubbing as possible, and then should be lightly patted with a brush of broom straw to give an even, stippled surface.

35. *Sand Floated.*—The finishing coat, after being brought to a smooth, even surface, should be rubbed with a circular motion of a wood float with the addition of a little sand to slightly roughen the surface. This floating should be done when the mortar has partly hardened.

36. *Sand Sprayed.*—After the finishing coat has been brought to an even surface, it should be sprayed by means of a wide, long-fiber brush—a whisk brook does very well—dipped into a creamy mixture of one part of cement to two or three parts sand, mixed fresh at least every 30 minutes, and kept well stirred. This coating should be thrown forcibly against the surface to be finished. This treatment should be applied while the finishing coat is still moist and before it has attained its early hardening—that is, within 3 to 5 hours. To obtain lighter shades add hydrated lime not to exceed 10% of the weight of the cement.

37. *Rough-Cast or Spatter Dash.*—After the finishing coat has been brought to a smooth, even surface with a wooden float and before finally hardened, it should be uniformly coated with a mixture of one sack of cement to 3 cubic feet of fine aggregate thrown forcibly against it to produce a rough surface of uniform texture when viewed from a distance of 20 feet. Special care should be taken to prevent the rapid drying out of this finish by thorough wetting down at intervals after stucco has hardened sufficiently to prevent injury.

38. *Applied Aggregate.*—After the finishing coat has been brought to a smooth, even surface, and before it has begun to harden, clean round pebbles, or other material as selected, not smaller than $\frac{1}{4}$ inch or larger than $\frac{3}{4}$ inch and previously wetted, should be thrown forcibly against the wall so as to embed themselves in the fresh mortar. They should be distributed uniformly over the mortar with a clean wood trowel, but no rubbing of the surface should be done after the pebbles are embedded.

39. *Exposed Aggregate.*—The finishing coat should be composed of an approved, selected coarse sand, crushed marble, or granite or other special material, in the proportion given for finishing coats, and within 24 hours after being applied and troweled to an even surface should be scrubbed with a stiff brush and water. In case stucco is

too hard, a solution of one part hydrochloric acid in four parts of water by volume can be used in place of water. After the aggregate particles have been uniformly exposed by scrubbing, particular care should be taken to remove all traces of the acid by thorough spraying with water from a hose.

40. *Mortar Colors.*—When it is required that any of the above finishes should be made with colored mortar not more than 10% of the weight of Portland cement should be added to the mortar in the form of finely ground mineral coloring matter.

A predetermined weight of color should be added dry to each batch of dry fine aggregate before the cement is added. The color and fine aggregate should be mixed together and then the cement mixed in. The whole should be then thoroughly mixed dry by shoveling from one pile to another through a ¼-inch mesh wire screen until the entire batch is of uniform color. Water should then be added to bring the mortar to a proper plastering consistency.

Specifications for Paint.—(Prepared by the U. S. Interdepartmental Committee on Paint Specification Standardization. See November 1920 JOURNAL. In addition to the following specifications the circulars include the specifications for Sampling, Laboratory Examination, Analysis and Reagents.)

Specifications for Green Paint—Semipaste and Ready mixed. (25a).—(Circular No. 97 by The Bureau of Standards).

General.—The paint contemplated by this specification is a chrome green paint, and it may be ordered either in form of semipaste pigment ground in linseed oil or as readymixed paint. The basis of purchase may be either net weight or volume (231 cubic inches to the gallon.)

(*a*) *Pigment.*—The pigment in both semipaste and ready-mixed paints should be a chrome green containing about 23 per cent of color (sum of lead chromate and insoluble Prussian blue) about 10 per cent of magnesium silicate, aluminum silicate, or similar siliceous material and about 67 per cent of barium sulphate. It should be made by precipitating the color on the proper base rather than by mixing the individual materials. It must yield on analysis:

	Maximum Per cent.	*Minimum Per cent.*
Color (total lead chromate and insoluble Prussian blue)	.....	20
Lead compounds other than lead chromate calculated as $PbSO_4$	.5	.....
Material soluble in water, including soluble Prussian blue	0.2	.....
Acid-soluble or water-soluble calcium in any form, calculated as CaO	0.5	.....
Material other than color and barium sulphate	15.	.....

The remainder must be barium sulphate

(*b*) *Liquid.*—The liquid in semipaste paint shall be entirely pure raw or refined linseed oil; in ready-mixed paint it shall contain not less than 90 per cent pure raw linseed oil, the balance to be combined dryer and thinner. The thinner shall be turpentine, volatile mineral spirits, or a mixture thereof.

(*c*) *Semipaste.*—Semipaste paint shall be made by thoroughly grinding the pigment with pure raw or refined linseed oil.

The semipaste as received and three months thereafter shall be not caked in the container and shall break up readily in linseed oil to form a smooth paint of brushing consistency. It shall mix readily with linseed oil, turpentine, or volatile mineral spirits, or any combination of these substances, in all proportions, without curdling. The color and hiding power when specified shall be equal to that of a sample mutually agreed upon by buyer and seller. The weight per gallon shall be not less than 16 lbs. The paste shall consist of:

	Maximum Per cent.	*Minimum Per cent.*
Pigment	72.0	68
Linseed oil	32.0	28
Moisture and other volatile matter	0.7	.....
Coarse particles and "skins" (total residue retained on No. 200 screen based on pigment)[1]	0.5	.....

[1] The No. 200 screen is the same as the screen formerly known as 200 mesh.

(*d*) *Ready-Mixed Paint.*—Ready-mixed paint shall be well ground, shall not settle badly or cake in the container, shall be readily broken up with a paddle to a smooth uniform paint of good brushing consistency, and shall dry within 18 hours to a full oil gloss, without streaking, running, or sagging. The color and hiding power when specified shall be equal to those of a sample mutually agreed upon by buyer and seller. The weight per gallon shall be not less than 12 pounds. The paint shall consist of:

	Maximum Per cent.	*Minimum Per cent.*
Pigment	55.0	50
Liquid (containing at least 90 per cent linseed oil)	50.0	45
Water	0.5	.....
Coarse particles and "skins" (total residue retained on No. 200 screen based on pigment)	0.5	.....

Specifications for Composite Thinner for Thinning Semipaste Paints when the Use of Straight Linseed Oil is not Justified. (25a)—(Circular of the Bureau of Standards No. 102.)

General.—This specification covers a composite thinner which contains in one liquid drying oil, drier, and volatile thinner. Such preparations are sometime called "Thinning Mixtures for Paint," and are also offered under a variety of trade names, such as "Japan Oil," "Paint Oil," "Linseed Oil Substitute," etc. The last name should however, not be used, for while such materials may have decided merit they are not substitutes for linseed oil.

The composite thinner must meet the following requirements:

Appearance.—Shall be clear and free from suspended matter and sediment.

Color.—Not darker than a solution of 6 g of potassium dichromate in 100 cc. pure sulphuric acid of specific gravity 1.84.

Odor.—Not offensive, either in bulk or in its subsequent use in paint mixtures.

Mixing with Linseed Oil.—When mixed in any proportion with pure raw linseed oil meeting the specifications of B. S. Circular 82, the resulting mixture shall be clear and shall show no separation or precipitation on standing 18 hours.

Drying.—When flowed on glass, the composite thinner shall set to touch in not more than 4 hours and dry hard in not more than 6 hours. When mixed with an equal volume of pure raw linseed oil, the resulting mixture when flowed on glass shall set to touch in not more than 6 hours and dry hard in not more than 8 hours.

Toughness.—The film on glass after baking for 6 hours at 105 to 110 degrees C (221 to 230 degrees F) shall be glossy, tough, and elastic.

Nonvolatile Matter.—Not less than 50 per cent by weight.

Acid Number.—Not more than 12, calculated to basis of nonvolatile matter.

Specifications for Spar Varnish. (25a)—(Circular of the Bureau of Standards No. 103.)

General.—The varnish shall be the best long oil varnish. It must be resistant to air, light, and water. The manufacturer is given wide latitude in the selection of raw materials and processes of manufacture, so that he may produce a varnish of the highest quality. It must meet the following requirements:

Appearance.—Clear and transparent.

Color.—Not darker than a solution of 6 g of potassium dichromate in 100 cc. of pure sulphuric acid, specific gravity 1.84.

Flash Point (Closed-Cup).—Not below 30 degrees C (85 degrees F).

Nonvolatile Matter.—Not less than 40 per cent by weight.

Set to touch.—In not more than 5 hours.

Dry Hard and Tough.—In not more than 24 hours.

Toughness.—Film on metal must stand rapid bending over a rod 3 mm. (1/8 in.) in diameter.

Working Properties.—Varnish must have good brushing, flowing, covering, and leveling properties.

Water Resistance.—Dried film must withstand cold water for 18 hours and boiling water for 20 minutes without whitening or dulling.

Durability.—The purchaser reserves the right to require that the durability of deliveries must be equal to a brand or sample mutually agreed upon by buyer and seller.

NOTE.—When durability tests are required, such tests will be made on each sample; but in cases where the testing laboratory has previous data on the same brand of varnish, acceptance or rejection of a given sample may be provisionally based on the last completed test of the brand of varnish in question.

Specifications for Asphalt Varnish. (25a)—(Circular of the Bureau of Standards No. 104.)

General.—This varnish shall be composed of a high grade of asphalt fluxed and blended with properly treated drying oil and thinned to the proper consistency with a volatile solvent. It must be resistant to air, light, lubricating oil, water, and mineral acids of the concentration hereinafter specified, and must meet the following requirements:

Appearance.—Smooth and homogeneous; no livering or stringiness.

Color.—Jet black.

Flash Point (Closed-Cup).—Not below 30 degrees C. (86 degrees F.)

Action with Linseed Oil.—Varnish must mix freely to a homogeneous mixture with an equal volume of raw linseed oil.

Insoluble In Carbon Bisulphide.—Not more than 1 per cent.

Nonvolatile Matter.—Not less than 40 per cent by weight.

Fatty Matter.—Not less than 20 per cent of the nonvolatile. Must be liquid and not show any rosin by the Liebermann-Storch test.

Set to Touch.—Within 5 hours.

Dry Hard and Tough.—Within 24 hours.

Toughness.—Film on metal must withstand rapid bending over a rod 3 mm. (1/8 in.) in diameter.

Working Properties.—Varnish must have good brushing, flowing, covering and leveling properties.

Resistance to Water.—Dried film must withstand cold water for 18 hours.

Resistance to Oil.—Dried film must withstand lubricating oil for 6 hours.

Resistance to Mineral Acids.—Dried film must withstand action of the following acids for 6 hours; Sulphuric acid, specific gravity 1.3 (about 40 per cent). Nitric acid, specific gravity 1.22 (about 35 per cent). Hydrochloric acid, specific gravity 1.09 (about 18 per cent).

Specifications for Liquid Paint Dryer. (25a)—(Circular of the Bureau of Standards No. 105.)

General.—This specification applies both to straight oil drier—that is, material free from resins or "gums"—and to Japan drier; that is, material containing varnish "gums."

The drier shall be composed of lead, manganese, or cobalt, or a mixture of any of these elements combined with a suitable fatty oil, with or without resins or "gums," and mineral spirits or turpentine, or a mixture of these solvents. It shall be free from sediment and suspended matter. The drier when flowed on metal and baked for 2 hours at 100 degrees C. (212 degrees F.), shall leave an elastic film. The flash point shall be not lower than 30 degrees C. (85 degrees F.) when tested in a closed-cup tester. It shall mix with pure raw linseed oil in the proportion of 1 volume of drier to 19 volumes of oil without curdling, and the resulting mixture when flowed on glass shall dry in not more than 18 hours. When mixed with pure raw linseed oil in the proportion of 1 volume of drier to 8 volumes of oil, the resulting mixture shall be no darker than a solution of 6 g. of potassium dichromate in 100 cc. of pure sulphuric acid of specific gravity 1.84."

Strength of Southern Pine and Douglas Fir. (19a)—(Technical Notes No. 119 Forest Products Laboratory, Madison, Wis.)

Tests made at the United States Forest Products Laboratory show that there is little difference between the strength of the southern pines and that of Douglas Fir from the Pacific Northwest. True longleaf yellow pine averages heavier, stronger, and tougher than Douglas fir. True shortleaf pine averages heavier and tougher than the fir, but is about equal to it in strength as a beam or post. Loblolly pine, though averaging heavier than the fir, is somewhat weaker. The difference in strength between any of these pines and Douglas fir, however, is not so great but that low density pieces of the one species are weaker than the average for the other species.

As far as strength properties are concerned, the choice between any two lots of southern pine and Douglas fir will depend upon the grade and density of the timber composing each lot. The Rocky Mountain type of Douglas fir averages considerably weaker than the Pacific Coast type.

Refrigeration Machines. (32a)—(Causes and Prevention of the Formation of Non-Condensible Gases in Ammonia Absorption Refrigeration Machines. Bureau of Standards Technologic Paper No. 180.) In the experiments conducted at the Bureau of Standards the conditions existing during the operation of ammonia absorption refrigeration machine were duplicated. It was found that the presence of the non-condensible gases that cause so much trouble in the operation of these plants is due to either of the following causes:(1) leaks of air into the system, and (2) the corrosive action of the aqua ammonia on the metal of the plant.

If the foul gas is mainly nitrogen, the gas is derived from the air that is leaking into the system. The oxygen originally present in the air is quickly used up when the plant is operated and so will be present in only a very small percentage of its original amount. On the other hand, if the foul gas is hydrogen, this is due to corrosion by the ammoniacal liquor. Pure aqua ammonia will not cause gas formation but if salts of such weak acids as carbonic acid are present in the aqua, the corrosion will continue during the life of the charge. If the aqua ammonia contains both nitrogen and hydrogen, both causes will operate.

The corrosive action of impure aqua may be prevented by the addition of either sodium or potassium hydrate to the aqua in the plant.

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